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NEW ENGLAND SURGICAL SOCIETY

RESECTION OF THE RIGHT COLON AND ANASTOMOSIS OF THE ILEUM TO THE TRANSVERSE COLON AFTER THE MIKULICZ PLAN*

BY FRANK H. LAHEY, M.D.†

I AM interested in presenting this operative plan not because of its originality, although there is a small step which may have some originality. I do not care about priority. When one discusses priority, it is evidence of senility. The important thing is that I have never been satisfied or felt safe with large intestine anastomoses. The large intestine does not lend itself well to safe anastomosis, at least in my hands, due to its contents on the right side being liquid, with organisms of such high virulence; because of the fact that it is sacculated, due also to its epiploic appendages and longitudinal bands, and in addition the attachment of the omentum. Therefore, I have always been on the lookout for schemes which would aim to make anastomoses of the large intestine safer.

There is a common criticism as to the left-sided Mikulicz resection; that is, that you cannot get out enough mesentery, and, if you get out enough mesentery, you may injure the blood supply of the lower segment, particularly as relates to the sigmoid; also that the location of the lesion must be in a very mobile portion of the descending colon or sigmoid to remove it satisfactorily.

This criticism does not apply to the removal of the right colon, and we have several times very satisfactorily utilized the Mikulicz plan in removal of the right colon and even up to half of the transverse colon and the application of the ileum to the remaining colonic stump. The ileum is very favorable as one of the spurs in the double-barrel arrangement of the Mikulicz plan (as shown in Ill. III), because of its liquid contents. When one cuts this spur between the ileum and the colon with a clamp in the second stage of the Mikulicz plan, it regularly tends to restore the fecal stream. Furthermore, in the application of the Mikulicz plan in right colectomy, just as much mesentery and as many glands can be taken out as can be taken out by the radical resection and primary anastomosis.

There is a certain disadvantage in this method here described, but it is worth putting up with because of its safety: that is, during the interval between the first and second stage there may be some irritation of the skin about the enterostomy secondary to the irritating discharge from the ileum. This can be cared for, however, with either ointment or Balsam of Peru and dusting powder and various other methods of dressing; and no matter how irritated the skin is, it is no drawback to the performance of the second stage closure of the enterostomy.

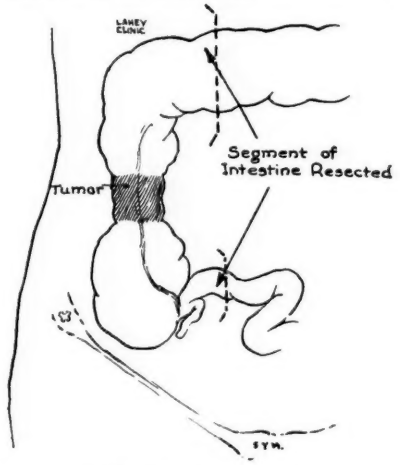

ILLUSTRATION NO. I.

This drawing diagrammatically shows at the dotted lines indicated by the arrows, the limits up to which the right colectomy may be carried on the colon and the ileum by the plan of anastomosis here described.

One can resect the whole right colon and well over onto the transverse colon, approximate the ileum to the remaining colonic stump, and close the resulting enterostomy extraperitoneally later. The ascending colon can be turned inward by cutting the external layer of parietal peritoneum beside the ascending colon, as described by W. J. Mayo. (Ill. II.) Two Ochsner clamps are placed on the colon at the level at which it is desired to remove it, and the bowel is cut with a cautery and the ends held in the clamp sterilized by the cautery. With this plan there is no soiling. The mesentery of the right colon may be ligated and cut just as low as desired, and as many glands and as much mesentery can be removed as can be removed by the radical resection and primary anastomosis. (Ill. II, Insert *a*.) Two clamps are placed on the ileum at the point at which it is desired to cut this, and, as with

*Read at the annual meeting of the New England Surgical Society, Portland, Maine, September 11, 1931.

†Lahey—Director of Surgery, The Lahey Clinic. For record and address of author see "This Week's Issue," page 359.

the colon, the ileum severed between the clamps with the cautery and its ends similarly sterilized with the cautery.

The ileum is then opposed to the transverse colon (Ill. III) as in colon to colon application of the Mikulicz plan. It is advisable in placing the ileum in approximation to the colon to apply it along the longitudinal band, where it fits snugly and adheres smoothly to the colon, and with posterior and anterior sutures (as shown in Ill. III, Insert *a*). It is advisable to implant the double-barreled colon and ileum in the lower end of the incision, because this portion of the incision is more mobile and lends itself more readily to closure at the second stage. In some of the cases, however, we have implanted it in the very upper end of the incision and it can be closed here very successfully.

In Ill. IV, you will see the situation when the ileum has been tacked to the transverse colon, when the segment of bowel has been cut away and the two clamps on the stumps of colon and ileum with the sterilized ends are sutured into the wound.

In Ill. V, is a sketch of the possibly original step which I have suggested and which has been of considerable value to us in relieving partial obstruction. One would hesitate to do even this type of resection in the presence of an acute obstruction, but if one staggers the ileum as I have suggested and illustrated here, it is possible to do an ileostomy immediately postoperative without interfering with the second stage of the Mikulicz plan. More ileum than colon is pulled out and left outside with the Ochsner clamp on it. A rubber-covered clamp can be put on the long loop of ileum (Ill. V) after the wound has been sutured, protected with dry gauze dressings, and towels clamped closely about the projecting ileum. The Ochsner clamp on the end of the ileum is now removed. No contents escape and a glass tube is immediately tied into the long segment of ileum. (Ill. V.) The rubber-covered clamp is then removed and ileal contents

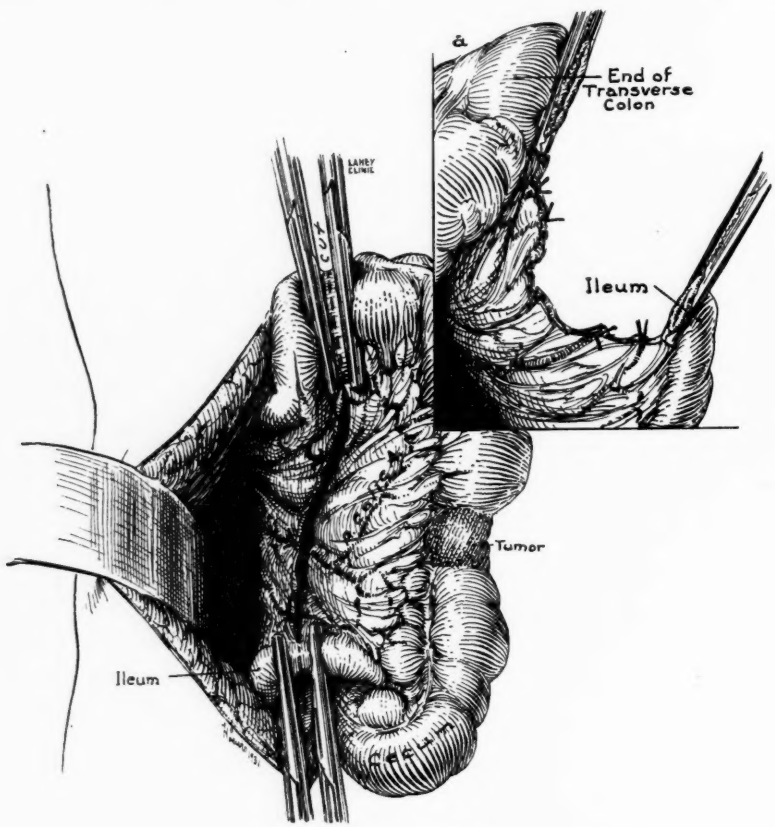

ILLUSTRATION NO. II.

This drawing shows the ascending colon turned inward so that it hangs by its mesentery after the leaf of external peritoneum has been cut. It shows the mesentery cut and its vessels ligated and the two Ochsner clamps on the colon and ileum. Colon and ileum are to be severed by the cautery between the clamps at the points marked by the dotted lines.

Insert *a* shows the situation with the colon and its contained tumor removed. The cut ends of the transverse colon and ileum are shown held in Ochsner clamps. These ends have been sterilized with the cautery and the two segments of bowel are now ready to be placed side by side in the wound and approximated by tacking stitches.

immediately escape through rubber tubing into a bottle beside the bed.

After the ileum has been drained for several days and all obstructive symptoms have been cared for, either in the patient's room or in the operating room with no anesthetic, this extra segment of ileum can be cut away quite painlessly with a cautery and with ligation of the mesentery of the projecting ileum, so that the ileal stump is at the same level on the abdominal wall as is the colon.

We have found that the second stage in the Mikulicz plan is often not well understood. If

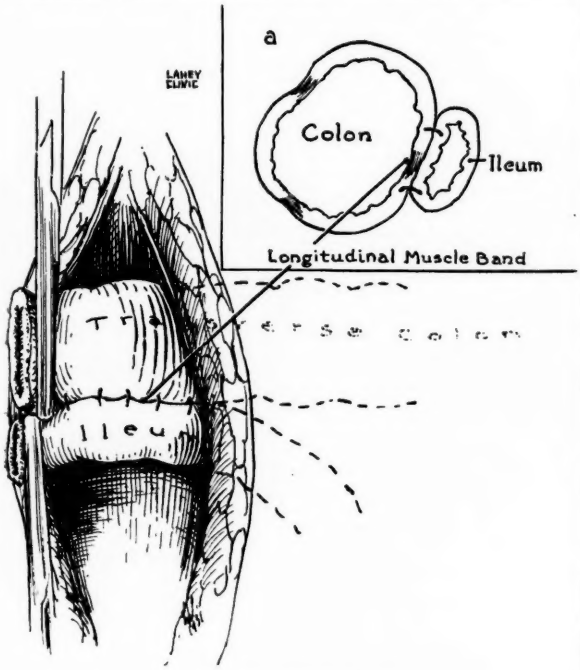

ILLUSTRATION NO. III.

Ileum has been placed in apposition to the transverse colon laying it in contact with the longitudinal band and held in this position by front and back tacking sutures of catgut. Note that a fairly long spur is made by approximating the ileum to the colon for a considerable distance.

Insert *a* shows diagrammatically the approximation of the ileum to the colon along the longitudinal band and the front and back row of approximation stitches.

one is to make the second stage in this procedure effective, a long double-barreled spur must be made and deeply cut by a long-jawed clamp being put on it. When this spur (as shown in Ill. VI) is made and cut deeply, then the liquid fecal stream of ileum tends to go along the transverse colon readily, and the secondary extraperitoneal closure is not followed by fecal leakage.

At this stage, then (as shown in Ill. IV) we have the entire right colon together with the hepatic flexure and also with its attached mesentery removed aseptically between Ochsner clamps. The ileum has been approximated to the stump of the colon, an Ochsner clamp remains on the stump of the transverse colon and on the stump of the ileum and will not slough off for four to six days, protecting the wound thus against contamination. We have had no serious trouble with wound contamination. At the end of a week to ten days the partition severing clamp has been applied and locked with one jaw in the colon and one in the ileum (as shown in Ill. VI). This will cut through in four to six days, and at this stage the patient is sent home for a five to six weeks' interval before completing the closure of the temporary enterostomy. One would like to do the secondary closure of the temporary enterostomy as soon as possible to relieve the patient of the annoyance and irritation of the liquid discharge from the ileum onto the abdominal wall, but it has

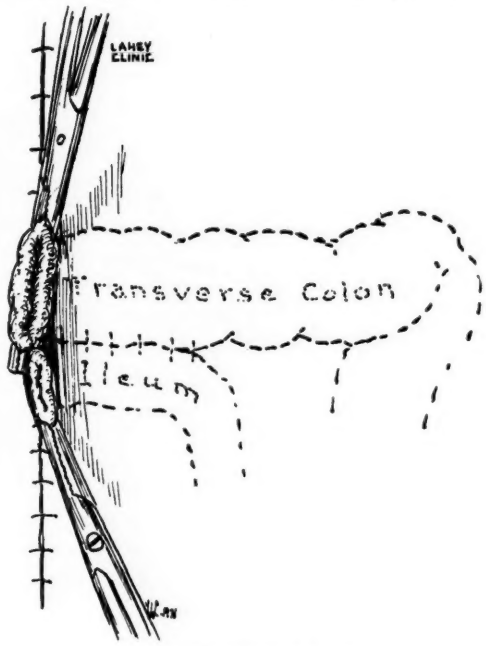

ILLUSTRATION NO. IV.

Shows the ileum and colon approximated with tacking stitches implanted in the wound and the wound closed about the cut ends of bowel. The wound is protected from contamination by the fact that the bowel ends have been sterilized with the cautery and by the fact that the clamps will not slough off the ends of bowel for from four to six days, by which time the wound is sufficiently healed to resist contamination.

proved better to wait for an interval of approximately five weeks, during which time most of the edema disappears from the wound and the peritoneum becomes firmly fixed to the common stump of colon and ileum, so that it will not become detached by the manipulations of the secondary closure.

At the end of five to six weeks the wound is reopened with local or general anesthesia, the skin separated from the edge of bowel, a small strip of skin being left attached to the bowel, the fascia separated and muscle separated (Ill. VII, Insert A) from the projecting loop of common ileum and colon until we have only the bowel sticking up with adherent peritoneum walling off the peritoneal cavity. The edge of the spur of intestine which now consists of colon and ileum combined, since the median partition has been cut through, is refreshed as to its edges (as

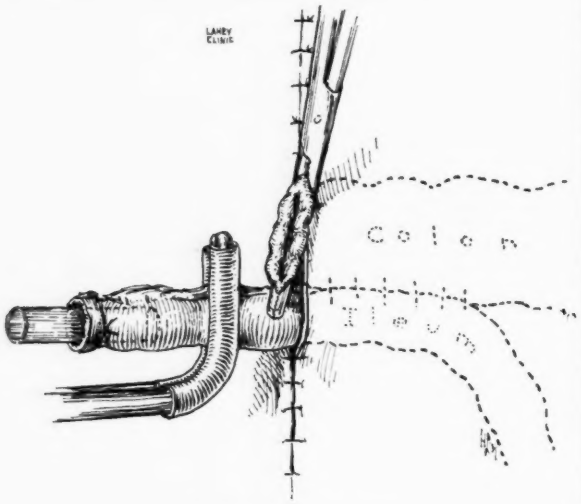

ILLUSTRATION NO. V.

This is the plan, where immediate drainage of the ileum is desired and to be employed, of staggering the ends of ileum and colon as they are implanted in the wound. Note the extra length of ileum pulled out into the wound. In this picture the rubber-covered intestine clamp has been applied to the long limb of ileum. The Ochsner clamp has been removed from the ileum and a glass tube, which is to be connected by rubber tubing to a bottle, has been tied into the ileum. The protective dressing about the wound during this procedure is omitted for the sake of clearness and relations of the two ends of bowel. At the end of eight to ten days, the excess ileum can be cut off with a cautery so that it is level with the end of the colon, and the situation is then similar to that shown in Illustration IV except that by that time the Ochsner clamps have sloughed off.

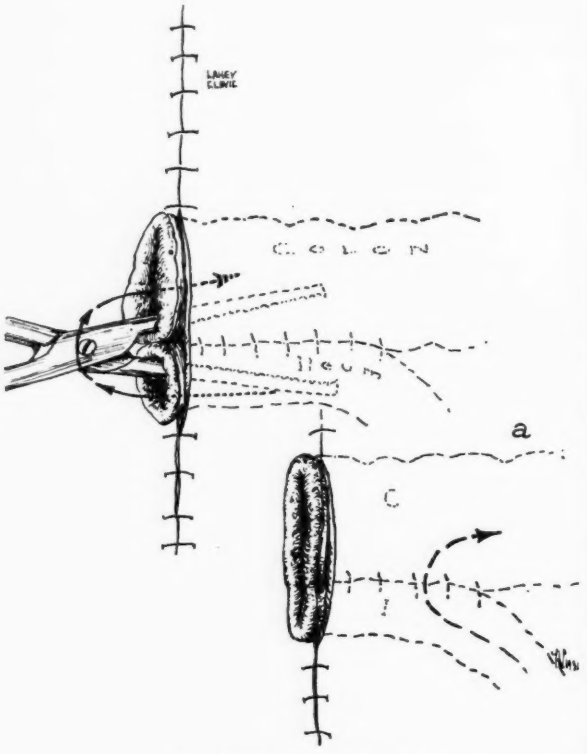

ILLUSTRATION NO. VI.

In this diagrammatic illustration one sees the Mikulicz method of introducing the clamp prior to locking it so that the spur between the colon and ileum is caught in the jaws of the clamp and cut as the locked clamp comes away by pressure necrosis.

Insert *a* shows the external end of the ileum and colon made into a common opening and the arrow indicating the course of the feces after destruction of the intervening septum.

shown in Ill. VII, Insert *a*) by cutting away the end of the temporary colostomy with its adherent skin and ligating any bleeding vessels, and turned in with a Connell stitch as in a gastro-enterostomy. (Ill. VII, Insert *b*.)

There is of necessity considerable soiling, but apparently it does no harm with the wound drained. Reinforcing inversion stitches are placed over the first layer which closes the open end of intestine tightly.

We now have the open intestinal canal closed, the attached peritoneum unopened, drains at the upper and lower ends of the wound leading down beneath the muscle, the muscle closed over that, the fascia over that, and the skin over the fascia. (Ill. VIII, Inserts *a*, *b* and *c*.)

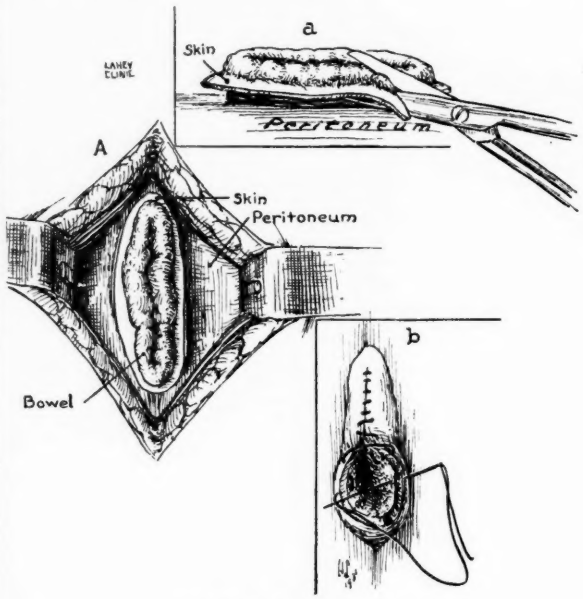

ILLUSTRATION NO. VII.

Shows the method of extraperitoneal closure of the temporary enterostomy (common ileum and colon opening).

In Illustration A the skin subcutaneous fat fascia and muscle have been dissected away from the tube of ileum and colon. A narrow strip of skin has been left attached to the edge of bowel to avoid oozing from the cut end of bowel. The peritoneum is still unopened and adherent to the neck of the protruding tube of bowel.

In insert *a* the edges of the open end of bowel are being refreshed and the section of adherent skin removed.

In insert *b* the open end of bowel, its vessels having been ligated, is being inverted and closed by a continuous Connell stitch of catgut and will be reinforced by another layer over this one. Note that this closure is entirely extraperitoneal as the peritoneum attached to the base of the tube of bowel is unopened.

All these wounds do not heal by first intention, due to occasional fecal contamination, but they are extraperitoneal and if drained do not require second operations. Even in the presence of the fecal discharge they close spontaneously.

I believe this represents a valuable procedure which anyone can safely employ for resections of the right colon, if the patient is willing to give up the time for the procedure, and willing to accept the slight amount of skin reaction which follows an ileostomy. It is and has been

a very safe method of resecting the right colon, in our hands, and if one staggers the ileum, as I have suggested, it offers also the opportunity of handling at least moderate degrees of intestinal obstruction without a preliminary ileostomy.

Discussion

Dr. F. B. Sweet, Springfield, Mass.: *Mr. Chairman and Fellows*—I think all of us realize from personal experience that the operation of right colectomy had, in its early development and use, a very real hazard and too great a mortality. That hazard and mortality, of course, were due to three factors. First, the depleted and anemic condition of the patient, because of the nature of his pathology; secondly, the magnitude of the one-stage operation, together with the necessarily greater or less soiling of the retroperitoneal wound; and thirdly, the leakage at the suture line.

The technique which Dr. Lahey has just described should minimize the hazard very materially since it provides for extraperitoneal resection and thus prevents soiling and suture line leakage.

I believe the procedure will prove very helpful in properly selected cases.

Dr. Lincoln Davis, Boston, Mass.: I think this is a very interesting application of the Mikulicz procedure, and I should think that it had very definite indications in certain cases; however, the generally accepted operation of resection of the right side of the colon with lateral anastomosis, or end to side anastomosis of the ileum with the transverse colon, is a satisfactory operation and as a rule does not carry high mortality.

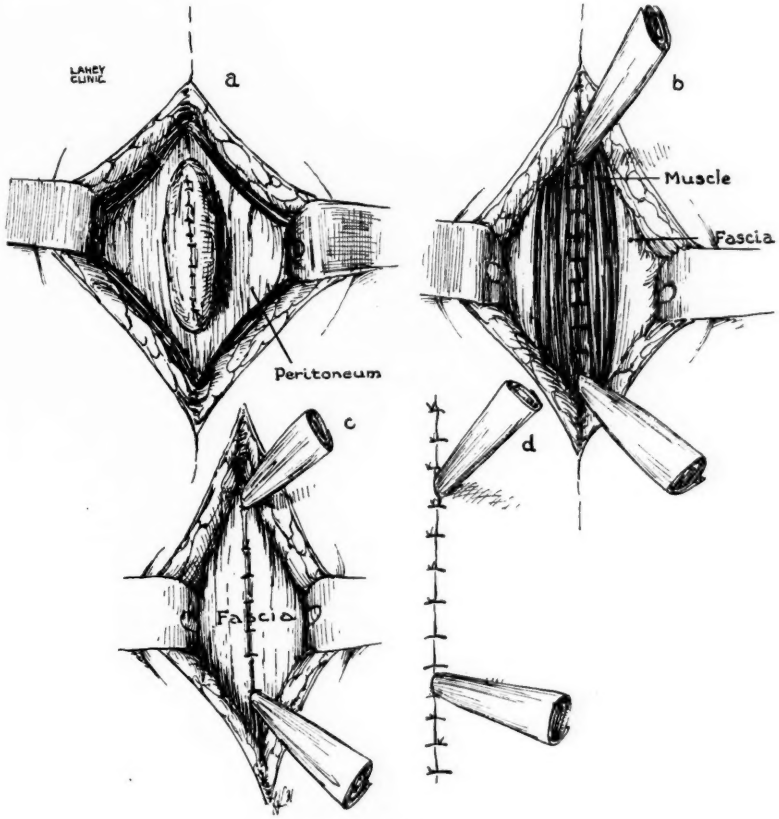

ILLUSTRATION NO. VIII.

a.—Shows the enterostomy opening closed and the peritoneum unopened.
b.—The rubber dam drains placed at the upper and lower ends of the wound down to the sutured bowel and the muscle sutured over these.
c.—The fascia closed.
d.—The skin closed and the drains emerging from the upper and lower portion of the wound.

If there is obstruction, this operation performed by Dr. Lahey with the modification of staggering the ileum, I think, is a very ingenious one and should be very useful.

The reason I arose to discuss this paper is to say that I like the Mikulicz procedure and have used it a number of times in the left colon, but it was not until within a year that one of the younger men on the staff applied it to the small intestine.

Dr. Shedden had an acute emergency in which he brought out the two ends of the small intestine, later applying a Mikulicz procedure

with excellent result. It made a great impression on me. I never had heard of its being applied to the small intestine before.

Recently I had occasion to use it in an elderly woman with gangrene of a loop of the small bowel. She was in desperate condition, old, with heart disease, and very sick. I resected and brought the ends of the small intestine out in a double-barrel, sewing the limbs together; later the spur was crushed and the fecal current partially reëstablished, but unfortunately she died of a pelvic abscess.

I believe the Mikulicz procedure can be applied not only to the left and right sides of the colon, but also in certain cases to the lower part of the small intestine.

Dr. F. B. Lund, Boston, Mass.: I have been a great friend of the Mikulicz procedure and I have had only one objection to its use in cancer of the sigmoid, beside the danger of a short mesentery, and that is danger of implanting it in the abdominal wall. In using the Mikulicz for cancer I have had it happen twice. However, I use the Mikulicz only in cases of acute obstruction. In this it is the simplest and safest procedure. The fact that you get your patients by the acute emergency compensates for the danger of implantation.

In cancer of the right colon, the anastomosis between the end of the ileum and the transverse colon by one of the aseptic procedures, with Rankin clamp, is so safe that I should have to be convinced that the extra time and trouble necessitated by the Mikulicz was worth while.

I had a woman come in last winter with acute obstruction, a fat old woman with heart block and a pulse of forty; that is all the beat that got to her wrist, but when we listened to the heart, it was very fast. I found an enormous sigmoid which I thought was cancerous. I brought the sigmoid outside by the Mikulicz method and opened it the next day. When I came to the second stage, removal of the growth, and put on the clamp, I found the mesentery tremendously thickened and a great deal of pus between its layers. The case was one of diverticulitis with inflammation and obstruction. After the clamp came off I was able to close the opening of the intestine in the wound without opening the peritoneum at all. Here was a case where there was no danger of inflammation and I felt that under the conditions of acute fibrillation of the heart and acute obstruction of the bowels the Mikulicz procedure was invaluable.

It is a life-saving procedure and the safest thing you can possibly do. I have used it with success in growths in the transverse colon as well as in the sigmoid. I have never used it in the small intestine although I think I may do it in the future, but I have been very well satisfied with the end to side anastomosis done even at the same time with excision of growths of the cecum and ascending colon.

Dr. P. E. Truesdale, Fall River, Mass.: I have lost two patients after resection of the right colon and ileocolostomy. That occurred after the same operation had been done four times successfully. I feel that if these two patients had had the conservative operation just described by Dr. Lahey, one or both might have lived.

Dr. John W. Keefe, Providence, R. I.: I have been for many, many years very much in favor of that Mikulicz operation. I had occasion recently to look up the history of a patient I operated on some thirty years ago. She was a woman of about twenty. I was called into the country to operate for appendicitis and thought we had to deal with appendicitis. She was seven months pregnant and, of course, the abdomen was distended with a peritonitis as well as pregnancy.

On opening the abdominal cavity I found that I had to deal with a volvulus which included the cecum, the appendix, the ileum, and part of the ascending colon. The bowel was twisted once and a half about. I undid this twist to the right and took the loop out through the opening I had made, then opened the colon and a great amount of liquid feces, dark and foul-smelling, came forth. So I united the ileum where it was sound, to the portion of the ascending colon above the gangrenous part in the manner that Dr. Lahey has described, and four days after that the young woman miscarried. Several months afterward I closed the opening and was successful at that first operation in getting primary union.

I think that addition that Dr. Lahey has made, to draw out more than has been ordinarily done in the Mikulicz operation is a decided advantage.

Dr. John F. Gile, Hanover, N. H.: We have had some experience with the Mikulicz plan in large intestinal work, and in the past year we had a case in which we tried the same procedure on a small intestine. This was a case of a very sick patient with acute intestinal obstruction in which it was necessary to remove a considerable portion of the small bowel, and on account of the general condition we did not think we were justified in doing more than leaving the two ends of the bowel out in the wound. The patient went along for two or three weeks and died.

I should like to bring out the point that you can do this procedure without using sutures at the time of operation, but by leaving clamps on the intestine lessen the danger of getting an infection.

The other point is that in the small intestine

nourishing fluids can be used directly into the gut, thereby gaining an added advantage by giving these patients fluids. A physiologist in Chicago has done experimental work on this, and by the use of rather complicated mixtures seems to show that these patients can get along for a considerable period of time. These were tried for some time in our case with more or less success, we thought. At autopsy there were loops of gut in the pelvis that were obstructed at many points. The previous history had been an acute appendicitis with general peritonitis, with the resulting adhesions which no operative procedure would have relieved.

Dr. David Cheever, Boston, Mass: I hesitate to prolong the discussion in view of the approaching tea at the lodge, but inasmuch as the principle involved in this discussion seems to be the desirability of applying the Mikulicz procedure to right-sided colectomy, and since so much, or indeed almost universal approval has been expressed about it, I should like to say that there is decidedly another side which I feel should be presented.

In the first place, we ought not to call this the Mikulicz procedure because this is not the original Mikulicz procedure, which involved bringing outside the abdomen the loop of bowel with the carcinomatous lesion at its apex and closing the wound around it and at a second operation removing the growth, and that, of course, necessarily resulted in removal of the growth with too small a margin, too little mesentery and glandular dissection and it involved the risk of implantation of disease in the abdominal wall. We should speak of it as the Mikulicz type of procedure or a modified Mikulicz.

I agree with Dr. Davis that among most surgeons there is no principle more fully, more clearly held than that in right-sided colectomy an immediate resection with suture anastomosis of the ileum to the transverse colon is not only feasible but safe and desirable in the majority of cases. I would also call attention to the fact that both Dr. Lahey and Dr. Sweet, in discussing the advantage of the Mikulicz principle in right colectomy, spoke of the particular importance of this procedure in the presence of obstruction, whereas it seems to me that most of us would agree that when the lesion is in the right colon up to and including the hepatic flexure, obstruction is very seldom a complication of the situation because the fecal current is fluid, and hence we don't have to deal with obstruction in the lesions which cause us to do a right-sided colectomy.

There is great difference of opinion as to the desirability of the Mikulicz procedure. Coffey, I think, said it is the most important principle ever applied to intestinal surgery and an English surgeon named Bell says its advantages are grossly exaggerated. Rankin and Judd advise a primary resection and ileo-transverse colostomy, usually making a safety valve by a Witzel tube enterostomy proximal to it. Most operators omit that.

The particular reason for my wishing to say something is that we are always confronted with a difficult problem in selecting the proper operative procedure for patients requiring colonic resection and, with the idea of trying to evaluate the different methods a little, I looked up the experience of the Brigham Hospital and reported it at the last meeting of the American Surgical Association, and I think it will appear in the October Annals of Surgery, in case you wish to look at it. I examined all the cases from the beginning of the hospital up to last June and, without giving the figures from memory, I would say the modified technique as applied to all cases of resection of the colon for malignant disease showed higher mortality than direct suture anastomosis preceded by colostomy, showed longer hospitalization, more operative procedures, and more cases discharged from the hospital with fecal fistula or discharging sinus; and, finally, the records showed during the hospitalization more comments of pain, painful procedures and of discomfort on the part of the patient, than in the course of the direct suture anastomosis preceded, when appropriate, by a proximal colostomy.

I think my own experience and that of many other men is that this right-sided colectomy and direct suture anastomosis between the ileum and transverse colon, with or without Witzel tube ileostomy, which I don't think is necessary, is on the whole the procedure of choice. I grant willingly that the Mikulicz procedure has an important place when we are confronted with an acute emergency, whether the lesion is in the small intestine or the junction of the small and large intestine, or in the large intestine itself.

Dr. Richard H. Miller, Boston, Mass.: I should like to ask a question which introduces a somewhat different phase, but which to me today is very important. Do you have and do you worry about the possibilities of gas bacillus infection?

The reason that this is on my mind is that yesterday I lost a case of gas bacillus infection following resection of the large intestine, and that makes four cases I have seen in a year.

I have been to our apothecary to take up the matter of use of the antitoxin, possibly because I know so many people approve of it, but I am in a state of not knowing what to do. Of course it may be a coincidence that I happen to have seen so many, but I have become distinctly frightened about it just now and I am curious to know if you have had any such experiences.

DR. F. H. LAHEY: I hadn't any idea that this simple little proposal would stimulate so much discussion, but it is fine that it has. I will answer some of the questions in order.

In regard to Dr. Miller's question about gas bacillus infection, I do not think one can ever be sure of avoiding it and that involves one of the serious sides of primary intestinal suture, that is soiling by anaerobes.

As to the question of the title, that is, after the Mikulicz plan of procedure, I had assumed that when I put down "After the Mikulicz Plan" that that implied some modification.

The principle of the Mikulicz plan remains about the same everywhere except that I think that when you do a Mikulicz, you no longer should leave the bowel and its contained tumor in the wound; you should cut it away between clamps as here described and if you cut it away, you do not have wound implantations. The illustrations show the lesion with its adjacent bowel cut away. If it is a proper case, you can pull it out far enough so that you can cut the bowel and its tumor away and get rid of it.

I think that we must all be careful about what our attitude is regarding our results. If other people's experiences are similar to my own, I think that is true. If anyone told me that my mortality in gastro-enterostomy was over five per cent., I should have felt quite certain he had told me wrongly, or if anyone had told me that in gastric resection as a whole it was twenty per cent., I should have been shocked, but when I came to analyze the figures, those are the facts, and I think before you settle too definitely how you feel about your results in intestinal resections and anastomoses, you should go back over your own cases and see what the mortality is, and certainly any method, I think, which offers possibilities of avoiding this mortality (and this method does) surely should be seriously considered.

I do not present the method with the idea that it will do away with all others, but as another plan to have in mind to use. Perhaps in many of your cases some of you will still want to do resections and primary anastomoses, but it is a good thing to have a variety of methods, particularly to have one that is pretty safe, and I think this is, and I think it is an addition to every surgeon's operative procedures in resection of the right colon.

PREVENTION OF THE SPREAD OF CONTAGIOUS AND INFECTIOUS DISEASES IN INTERSTATE COMMERCE

In a report recently made public by Surgeon General H. S. Cumming, it is stated that during the past fiscal year changes in procedure in carrying out certification of drinking water supplies used by common carriers and vessel water supply systems tended to increase the efficiency of this work. Approximately 87.5 per cent. of 2,275 drinking water supplies used on interstate trains and 88 per cent. of the 243 supplies on interstate vessels were inspected and reported upon. With the continuance of the procedure now in force, it is believed that the percentage of water supplies supervised and controlled will be materially increased.

The present method of control of shellfish sanitation has been reasonably satisfactory, but some change in the procedure is being considered whereby this control may be improved. Approval has been given tentatively for the interstate shipment of clams conditioned in water made sterile by chlorine, provided that the plans are operated under state supervision. Further methods of conditioning are necessary, but the process is one presenting many possibilities.

Regular coöperative rural sanitation demonstration projects were conducted during the past fiscal year in 223 counties in 28 States. On January 1, 1931, a survey made showed that there were 557 counties with full-time health service in the United States. This represented a gain of 52 over the preceding year.

By an act approved February 6, 1931, Congress made available to the Public Health Service the sum of $2,000,000 for emergency health work in the drought-stricken areas. In carrying out this work a modification of the plan used for the regular coöperative rural sanitation activities was adopted, with the result that details of administration were quickly worked out with the States and field projects were under way within a short time. By June 30, 1931, there were in operation in the 16 States within the drought areas 333 field organizations, including projects covering 395 counties. The work carried on has consisted in the activities usually conducted by full-time county health units, with special emphasis upon the prevention of communicable diseases by general immunization, the sanitation of milk and water supplies, the improvement of excreta disposal conditions, and attention to the health of infants, children and mothers. It is believed that many of the temporary units organized will serve to stimulate the establishment of permanent health departments supported with local funds in the future.

Trachoma eradication work was continued through the operation of hospitals provided in coöperation with State health authorities and located at Rolla, Mo., Knoxsville, Tenn., and Richmond, Ky.

Plague eradicative activities included intensive rodent control measures carried on in coöperation with State and local authorities in four California counties. Two new foci of plague in ground squirrels were found in one of the counties in California. —*Bulletin United States Public Health Service.*

ANNUAL ORATION OF THE BOSTON MEDICAL LIBRARY*

Haller and the Humanization of Bibliography

BY JOHN F. FULTON, M.D.†

S'IL est un *métier* au monde, ingrat, pénible, ardu, mal rétribué, peu considéré, c'est, à coup sûr, celui de bibliographe. "Un bibliographe! qu'est-ce que c'est que ça?" disent les gens du monde, et *ça* est un euphémisme. . . .

"Un bibliographe! disent les savants et quelques lettrés; mais c'est un sous-ordre qui a son utilité! D'abord il ne porte ombrage à personne, attendu qu'il est systématiquement écarté de l'administration des bibliothèques publiques; puis il peut, dans sa sphère modeste, nous rendre quelques services; quand nous sommes embarrassés, il nous renseigne à l'endroit des sources spéciales; il nous indique les curiosités scientifiques; c'est un catalogue ambulant. . . ., etc. etc."

Et Dieu sait qu'il est quotidiennement consulté, ce catalogue!

Bref, un bibliographe peut, à tout prendre, mériter quelque intérêt.

Eh bien! vous tous, à qui j'adresse ces dernières lignes, "*Lecteurs* très-illustres, et vous, *Abonnez* très-précieux (car à vous tous, non à d'autres, sont dediez mes escritz. . . ."), si un bibliographe rend des services (et non point des arrêts), s'il est à certains égards digne de quelque indulgence, daignez lui savoir gré de ses efforts, et ne lui reprochez pas avec trop d'amertume ses faiblesses, ses oublis, ni même ses erreurs. (P. Deschamps, in Brunet's *Manuel du Libraire*, Supp. Tom. *i*, 1878, p. xv.)

Dr. Bartol, Ladies and Gentlemen:

IT was very heartening to be asked to speak in these familiar surroundings, and I immediately accepted your generous invitation without knowing what my subject would be and with many misgivings as to my ability to do justice to it when chosen! It is difficult to describe an emotional attachment to an institution, but it may nevertheless be very real and I cannot disguise the feeling of affection which I have always had for this Library. At one time, not very long ago, it was a second home and I naturally return to it with particular pleasure and joy.

I

HUMANIZATION of bibliography, the subject upon which I propose to speak, has come about very recently; and it is a topic which lends itself appropriately to discussion here, since members of the medical profession have been at the forefront of the new movement. Within the past few years there has arisen in the world of letters a new attitude toward a vocation which in years gone by was regarded as a dismal and soulless science, involving listing of authors, titles, and the dates of books. The only prerequisite which the laity recognized was accuracy; bibliographers were in fact fearsome mortals—exsuccous vestals and dried-up old men—to be avoided at all costs! In a diverting passage from Deschamps's supplement to Brunet's *Manuel du Libraire*, which I have placed at the beginning of this paper, one perceives, in his mixture of jest and pathos, that the author despaired of ever receiving the recognition that was his due: "'Un bibliographe! qu'est-ce que c'est que ça?' disent les gens du monde, et *ça* est un euphémisme . . . c'est un catalogue ambulant." Deep in their hearts reference librarians perhaps like to be regarded as ambulatory catalogues—certainly Mr. Ballard is not far removed from that highest stage of primate development, the *encyclopaedia animata*—but in addition to this he retains those charming human characters of the genus from which he evolved. Mr. Ballard, indeed, represents one phase of the modern movement in bibliography to which I should like to refer before tracing its origin.

When Deschamps wrote in 1878 it had not come to be the fashion to publish bibliographies of individual writers. Bibliographers were more concerned with description of single books and with subjects, and the followers of the new science protested a good deal about their 'purity', *i.e.*, they were quite clearly *not* concerned with the contents of books, much as certain modern scientists assume the pose—or is it a poise?—that farthest from their thoughts is the practical application of their work. Bibliography, it was said, is the science of book description—nothing more. This point of view is set forth in the following passage from John Ferguson's admirable address: *Some Aspects of Bibliography*[3] published in 1900 after retiring from the Presidency of the Edinburgh Bibliographical Society:

"The subject which our Society cultivates is the printed book, its origin, character, and life. Bibliography, in the widest sense of the term, is 'writing about the book'. It has nothing to do, in the first instance at least, with the contents. They may be good, bad, or indifferent, but they do not concern the bibliographer. If one may so say, he is not a book-ethicist, but a book-ethnologist. He has to do with editions and their peculiarities, with places, printers, and dates, with types and illustrations, with sizes and collations, with bindings and owners, with classifications, collections, and catalogues. It is the book as a material object in the world that is his care, not the instruction of which it may be, or may fail to be, the vehicle. Bibliography is the science or the art, or both, of book description." (Pp. 2 and 3.)

*Read January 19, 1932.

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But there have always been some who appreciated that bibliography involved more than the enumeration of signatures and pagination, and the other bookish minutiae dear to the hearts of collectors. Ferguson, who in 1900 had voiced his attitude as to the contents of books in relation to bibliography, soon belied his own teaching by publishing a work which will remain for all time an ideal of perfect bibliography; the *Bibliotheca Chemica: A catalogue of the Alchemical, Chemical and Pharmaceutical Books in the Collection of the late James Young of Kelly and Durris, Esq., LL.D., F.R.S., F.R.S.E.*, published at Glasgow in two volumes in 1906[4]. Here one finds admirable book description followed in each instance by a brief statement concerning the author, the contents of the book, its significance in the history of chemistry, and a list of valuable references (with exact pagination!) in which further information concerning the book can be found. Thus, concerning the obscure writer Giovanni Bracesco, Ferguson remarks:

"In the tract *Lignum Vitae* the author has tried to discover the substance by which the patriarchs prolonged their lives. Kopp says 'Braceschi was a physician from Orci nuovi in the Brescian district, towards Crema, which is more probable than that he was Prior of the "regulirten Chorherren of St. Segoud".' Cozzando calls him a man of curious and varied knowledge, but 'huomo vago,' by which, judging from his further remarks, he probably means a person brilliant but without steady application. No details are given of his life. He flourished in the middle of the sixteenth century." (*i*, p. 124.) And this is followed by a list of fourteen references to the author.

And again of the picturesque figure, Nicolas Flamel, he writes:

"Flamel is one of the most renowned of all the adepts, for in his case the philosopher's stone acted in its double capacity of conferring riches and long life. He was born about 1330—though the date is by no means certain—acted as scrivener till an alchemical book written on leaves made of the bark of a tree fell into his hands, when he forthwith began the search for the great elixir, which he succeeded in acquiring after twenty-four years' study, long journeys, hard labours, and many disappointments. His experiments were successful in 1382. The wealth he acquired was devoted to the building, restoring, and decorating of churches and hospitals. He is reputed to have died in the year 1418, but Paul Lucas relates that when travelling in Asia Minor he met a dervise who said that Flamel and his wife were still alive. This story and the reports about Flamel's wealth were examined and criticized by Estienne François Villain in his history of Flamel (*q. v.*).

"Most of the accounts contained in the histories are based on what is reputed to be Flamel's own narrative, as given in his *Hieroglyphicks*. His tombstone, dated 1418, from the old church of Saint-Jacques-la-Boucherie, is now preserved in the Hotel de Cluny, at Paris.

"Lists of Flamel's works are given by Borel, Roth-Scholtz, Lenglet Dufresnoy, Adelung, Gmelin, Fuchs, Schmieder, Kopp.

"Flamel's portrait is prefixed to Stück iii. of Roth-Scholtz's *Bibliotheca Chemica*.

"For his connection with Abraham Eleazar *see* ABRAHAM." (*i.* pp. 280-281.)"

After which he lists forty-five references to Flamel and his work.

It is unnecessary to multiply these examples. Ferguson's *Bibliotheca Chemica* indeed marked a new epoch in subject bibliography, and it has set a standard which has been the envy of all subsequent workers. No one appreciated it more than did Osler, and upon it he modelled some of the features of his great catalogue of medical books. Osler's notes are less numerous and perhaps less consistent than Ferguson's but they are far richer in human interest—but I need not discuss the *Bibliotheca Osleriana*[22], for I am sure it is familiar to you all. It clearly represents the greatest achievement of the humanistic movement in medical bibliography.

To one properly equipped no part of bibliography holds more treasures than do books of the 15th century. It should be a source of great pride to the members of this Library that, thanks to the foresight of the late William N. Bullard and the wisdom of the Director, we have here one of the best collections of medical Incunabula in the country. But for ordinary people with little Latin, less Greek and no abbreviations, they present formidable obstacles. However, for Zoltán Haraszti of the Boston Public Library they hold no terrors; in a series of erudite, and at the same time most readable, articles published in *More Books*[14], he has described the contents of the chief Incunabula in the Boston collection, and I regard his papers as perhaps the most important contribution to Incunabula literature of the last decade. Would that this Library could secure his services for the Bullard collection!

But the humanistic movement in bibliography has received a larger stimulus from the appearance of the *personal bibliography*—a phase of the subject restricted almost entirely to the 20th century. Before 1900 the works of a few of the novelists, such as Dickens[23], had been dealt with, but not in the modern manner. After 1900 individual bibliographies began to appear, chiefly under the aegis of the larger bibliographical societies. Perhaps the best known of this group is Mr. Wise's 'Coleridge' published in 1913[25].

To Geoffrey Keynes, I think, belongs the credit of having persuaded public and publisher that a

personal bibliography is both safe and advantageous! I need scarcely remind you that Mr. Keynes is a surgeon who spends long hours every day in operating at St. Bartholomew's Hospital. In 1914 he issued the first edition of his memorable bibliography of John Donne[15] which, in addition to describing bibliographical minutiae of the separate editions, gave notes concerning the circumstances under which the works were written and important information about their contents. I take it as a sign of the times that Mr. Keynes has now been called upon to publish a second edition of his bibliography of Donne, and I am not familiar with any other bibliography of an individual writer which has passed into a second edition at the request of the publisher. Many of you are undoubtedly familiar with Mr. Keynes's other Bibliographies, of Sir Thomas Browne[17], Blake[16], Hazlitt[21], Jane Austen[20], William Pickering[18], William Harvey[19], etc., etc. The *Bibliography of Jane Austen*, issued in 875 copies, was sold out within a day or two of publication! When this can happen to works dealing with a subject formerly regarded as drier than dust, I think you will agree with me that something new and fundamental has happened. My contention is that the subject has finally become humanized.

In the preface to the bibliography of a 17th-century[5] writer I have recently attempted to describe the new point of view in bibliography in the following terms:

"A modern bibliographer must 'anatomize' his books: he dissects them with infinite patience, lifting their epidermis to find what lies beneath; he is concerned with their joints and ligaments, and has great delight in discovering parts which have been artificially replaced; he seeks for errors in the hand of the maker, but he views with charitable amusement all signs of human frailty. Bibliography is indeed an all-absorbing occupation, but its devotee is frequently face to face with those who fail to understand the source of his enjoyment. A mere list of bibliographical idiosyncrasies with mistaken signatures, pagination, and gatherings, has little appeal to any one not a collector of books; . . . a bibliographer . . . has difficulty in justifying his existence if he fails to make himself useful to those not pursuing his specialized field. He must reveal something more than the mechanics of bookmaking. He can endeavour to assess the importance of a book; he may say how the author came to write it, or investigate the influence which it exerted upon his contemporaries." (P. 6.)

We may be amused by the evidence of human foibles and errors in the hand of the maker, but this must not carry us away from the fundamental service of bibliography, namely, the indication of the contents of books. How often has one wished to have a brief statement of the scope of a given work whose title one has stumbled upon somewhere in the literature! And it was this need which Albrecht von Haller was the first fully to appreciate. However inhuman may have been his habits of living, he took this great step towards the humanization of bibliography and I therefore shall venture to remind you very briefly of some of the details of his life and habits of work.

II

While attending the First International Neurological Congress in Berne last summer I had the opportunity to see the Haller manuscripts in the *Stadt-Bibliothek* of Berne, generously shown to us by the Director, Dr. Bloesch. Shortly after Haller's death his manuscripts were distributed and passed ultimately to the library at Berne and to three or four Italian libraries. Two years ago the papers that had found their way to Italy were collected by Signor Mussolini and returned to Switzerland in exchange for some Italian works of art. Now that they are once more reassembled it is possible to form a clear idea of how Haller accomplished his prodigious labor. The collection consists of 67 volumes of correspondence from scientists and literary men of the 18th century, manuscripts and interleaved copies of many of his published works, but much more interesting and important are the 20 volumes of abstracts of the books he had read. He began his abstracts in 1731 when he was 23 years of age and he continued them until just before his death in 1776. Throughout this long period it was Haller's practice systematically to summarize and to comment upon every book he had examined—always in Latin and on a uniform size of page. The collection is unique and, next to the Napoleonic correspondence, it represents one of the greatest examples of human industry in existence.

This remarkable series of notes, which was bound up and indexed a few months before his death, represents a cross-section of Haller's mind and they were undoubtedly the basis of his phenomenal erudition. I have not been able to discover how Haller was originally led into this practice. Certainly it is not a thing that many students of twenty-three years are likely to do. But Haller was different. Born October 16, 1708, of an ancient and respectable family of Berne, he became distinguished from earliest infancy by his extraordinary intellectual powers and by his feats of memory. At four he expounded the Scriptures to his father's servants; at eight he had written 2000 brief biographies; at ten, a brief lexicon of Greek, Hebrew and Chaldee; at twelve he began to write verse, and at fifteen an epic poem of 4000 stanzas which nearly cost him his life when he attempted its res-

cue from the flames. His father wisely allowed him the advantages of wandering from one university to another, for at fifteen he was studying philosophy at Tübingen and at seventeen was sitting at the feet of Boerhaave, then at the peak of his great career. Haller took his medical degrees in 1726, when eighteen, and I am able to show you his graduating thesis[6] in which he disproves Cowitz's alleged discovery of a new salivary duct, proving that the structure in question was in fact a blood vessel. This was Haller's first published work, promising yet not brilliant, but an early herald of the great horde of tracts, epistles, poems, monographs, and bibliographies which were soon to follow. Later he studied in London and in Paris and finally in Basel under the mathematician Bernoulli. He then returned to Berne, where in 1734 the Republic established a public amphitheatre where he was asked to teach anatomy. But the even tenor of his life was unfortunately interrupted at an early age by the responsibilities of an important university position. George II of England had founded the University of Göttingen in 1736 and invited Haller, then twenty-eight years of age, to occupy, as Holmes might have said, a whole settee, for his Chair comprised Anatomy, Surgery and Botany. There, amid distractions and domestic misfortunes which would have overwhelmed most men, he laid the foundation of his knowledge of anatomy, physiology, and the ancillary sciences. He remained in Göttingen until 1753. During this time he was called to Oxford, Leyden, and Berlin but he elected to return to his native town. And there in 1753 he ultimately settled down to fifteen years of literary productivity unparalleled in the annals of history. First came a period of important physiological monographs on embryology[10], the circulation[8], on reproduction[12], on bone formation[9], and on irritability[11]; and then his staggering treatise on physiology in nine volumes[7], an inexhaustible storehouse of knowledge and the greatest compendium of physiology ever attempted by a single author. The catalogue of works consulted which is given in the ninth volume, alone occupies 100 pages and he apologizes for omitting tracts and brochures which he did not happen to have in his library! I might tell you also of Haller's books on botany, his unpublished history of medicine, his volumes of poems, his thirteen-volume edition of Greek medical texts, his biographies in the great French encyclopaedias, but these things would carry us too far away from his bibliographies which I must now describe.

Haller's *Bibliothecae* occupied the last ten years of his life, but they were based upon the years of incessant reading and upon his practice, alluded to above, of writing a concise summary in his own hand of every book he had perused. There were four separate bibliographies, dealing consecutively with botany (1771), surgery (1774), anatomy (1774), and medicine (1776). In each the materials are arranged chronologically; each author is given a numbered section and following his name is a brief statement of his university and professional connections. Works are then listed, the titles accurately transcribed and the place, date, and size of book are indicated but not pagination. After each title Haller gives a summary of the chief contents of the book with critical comments on the author's views, discoveries, remedies or anything else about the book that may be novel or interesting. At times these summaries run into a page or more of closely printed Latin. The comments are in brief, almost staccato, sentences and since Haller was not careful to observe the word order of classical writers the statements are generally surprisingly clear and readable. Next to the *Index Catalogue* of the Surgeon General's office of the United States Army, the Hallerian bibliographies represent the greatest compilation of medical titles ever brought together, and a more detailed description of the bibliographies may now be given.

Bibliotheca Botanica. Qua scripta ad rem herbariam facientia a rerum initiis recensentur *Tiguri* [Zurich], *apud Oreil, Gessner, Fuessli, et Socc.* 1771-72.

Tom. I. Tempora ante Tournefortium [*c.* 1700.]. Dedicated to John, Earl of Bute. The preface is dated 1. Januar. 1771. xvi + 654 pp.

Tom. II. A Tournefortio ad nostra tempora. The preface is dated 9. April, 1772. 1 l., 785 pp.

Note: Copies of this work exist with exactly the same collation, but bearing a new cancel title-page with the imprint: *"Londini, Prostant apud Carol Heydinger, Biblipol. in vico vulgo strand dicto (No. 274.) M. DCC. LXXI."* The index unfortunately was poor, but its defects have recently been repaired by Christian Bay[13].

Bibliotheca Chirurgica. Qua scripta ad artem chirurgicam facientia a rerum initiis recensentur. *Bernae, apud Em. Haller, & Basileae, apud Joh. Schweighauser.* 1774-75.

Tom. I. Tempora ante annum MDCCX. The preface is dated 22. Mart. 1774. iv + 593 pp.

Tom II. Ab anno MDCCX. ad nostra tempora. Dedicated to Joseph Marie Francis de Lassone. The preface is dated 28. Februar. 1775. viii + 695 pp.

Bibliotheca Anatomica. Qua scripta ad anatomen et physiologiam facientia a rerum initiis recensentur. *Tiguri* [Zurich], *apud Oreil, Gessner, Fuessli, et Socc.* 1774-77.

Tom. I. Ad annum MDCC. The preface is dated 23. Mart. 1774. viii + 816 pp.

Tom. II. Ab anno MDCCI ad MDCCLXXVI. Dedicated to Sir John Pringle. The preface is dated 13. Mart. 1777. 2 l., 870 pp.

Note: Copies of this work exist with exactly the same collation, but bearing a new cancel title-page with the imprint: *"Lugduni Batav. apud Haak & Socc."*

Bibliotheca Medicinae Practicae. Qua scripta ad partem medicinae practicam facientia a rerum initiis ad A. MDCCLXXV recensentur. *Bernae apud Em. Haller, & Basileae apud Joh. Schweighauser.* 1776-88.

Tom. I. Ad annum MDXXXIII. Dedicated to Sir John Pringle, the distinguished English physician. The preface is dated 15. Mart. 1776. viii + 539 pp.

Tom. II. Ab anno 1534 ad A. 1647. Dedicated to J. Baptiste Antoine Rast, Professor of Medicine at Lyons. The preface is dated 7 Mart. 1777. vi + 722 pp.

Tom. III. Ab anno 1648. ad A. 1685. Dedicated to François Louis Tribolet, City Physician of Berne. The preface is dated 13. Mart. 1779. 2 l., 650 pp.

Tom. IV. Ab anno 1686. ad A. 1707. Edited by Brandis, whose prefatory note describing the state of the manuscript on Haller's death is dated Hanover, September, 1787. viii + 598 pp.

Undoubtedly there exist copies of the *Bibliothecae* with other imprints. Those given above in the title references are the imprints of the original printers and publishers.

Cuvier in his most attractive brief biography of Haller in *Bibliographie Universelle* (1817, *xix*, pp. 330-337) states that in addition to the four bibliographies just mentioned Haller contemplated a 'Bibliotheca Physica' which he did not live to complete. Some conception of the magnitude of these four bibliographies can be obtained from the carefully compiled indices to be found at the end of each volume. Thus the index to the 'Chirurgica' occupies nearly 50 pages, each with more than a hundred names, making a total of approximately 5,000 authors cited. In the 'Medicina' 11,400 authors occur in the index. To have given summaries of a fraction of the works of even a small fraction of these authors would in itself seem a superhuman task—and yet both fractions are large, at least 20% of all the works listed are summarized, and probably 95% of the important works in the history of these four sciences have received some personal comment. How did he accomplish it before the days of secretaries and dictaphones? He undoubtedly had some clerical assistance, but he did not have a syndicate or office staff. To be sure he had three wives (successively) and they helped—one hopes sympathetically; and he had a goodly number of children and they also helped. But the reading and summaries were his as the 20 volumes of abstracts in his own hand clearly prove. It is said that he declined all forms of social activity including alcoholic stimulants, and that he read before, during and after meals, on horseback and when promenading. When he broke his right wrist he astounded his physician by learning, within 24 hours, to write with his left hand! The fire of incessant industry burned within his soul—and for such a man there is no limit to accomplishment.

III

The supreme achievements of the human intellect have generally been wrought by men who worked alone, but such individuals seldom have founded schools or established movements continuing after their time. One might cite Isaac Newton and Willard Gibbs or individualists such as Helmholtz and Claude Bernard, who rose far above their contemporaries by virtue of their innate genius. Another type of individual, equally important in the history of science, has made few discoveries and has submerged his own work in the contributions of his pupils. It is this group which has created great movements. In physiology, for example, one will recall readily the names of Michael Foster, Carl Ludwig, Kronecker, and a host of others who found in Ludwig the inspiration of a great example. In one sense Haller, though a great physiologist, falls into neither of these groups, for, strictly speaking, he was not a man of genius, and he clearly was not the founder of a school. In the broad field of physiology he made few discoveries and apart from the theory of irritability most of the doctrines which he promulgated were wrong; yet no personality of the 18th century, except possibly Voltaire, exerted a greater influence than Haller upon all phases of intellectual activity.

A most illuminating analysis of Haller's character and contribution was written in 1901 by a member of this Library[1], when a postgraduate student at Berne. He made the interesting comparison of Haller and Hunter, the two commanding figures in medicine of the 18th century: Haller, a precocious child, who at the age of ten wrote Chaldee, Greek and Hebrew; and John Hunter, surgeon, an obstreperous youth who, through neglect, remained the genius he was born. When Haller died his books and his manuscripts were sold and distributed, only to be brought together a century and a half later through the liberality of an Italian dictator. He left no following and the torch which he had carried in science became almost at once extinguished. John Hunter, on the other hand, created a great school of surgery and his influence is still felt. The principles for which he strove are the principles which still guide the surgical investigators of the present generation.

It is therefore a fact of peculiar significance that the man who drew this striking comparison between Haller and Hunter had occasion to return, during the past summer, to Haller's native town of Berne—some 30 years after his experience there as a postgraduate student—to give an account of his own life's work in cerebral surgery[2]. The occasion was the First International Neurological Congress, and among those present were 26 of his former pupils. Dr. Welch[24], who also attended the Congress, pointed out that the appearance of an American "school" marked a turning of the tide and a beginning of the repayment of America's indebtedness to Europe in the field of medicine.

Haller had thus been a great example, but it was Hunter whom Dr. Cushing chose to emulate.

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MASSACHUSETTS PNEUMONIA PROGRAM*

BY RODERICK HEFFRON, M.D.†

I HAVE been asked to tell something about what the Department of Health is doing for lobar pneumonia in this State.

About three years ago, the State began the manufacture and distribution of antipneumococcic serum to several hospitals in Boston and in surrounding towns to find out if it was possible to lower the death rate from lobar pneumonia in this area. At the end of two years, case records of a number of patients treated with antipneumococcic serum had been gathered. Of these records, the greater number of them we could not use as they were worthless from both a clinical and a statistical standpoint. With that in mind and in view of the cost of the serum to the State, Doctor Bigelow decided to call together a committee of several leading physicians representing the Class A medical schools in Boston, some of the local public health officials and a few general practitioners. This committee comprises what we now call our Advisory Committee on Lobar Pneumonia and its members are:

Dr. E. S. Calderwood, Dr. Roger I. Lee, Dr. Frederick T. Lord, Dr. A. E. Parkhurst, Dr. Milton J. Rosenau, Dr. Arthur D. Cushing, Dr. Edwin A. Locke, Dr. Robert N. Nye, Dr. Jos. H. Pratt, Dr. Wilson G. Smillie.

The problem was put up to this Committee and the great cost of the serum was emphasized and the question as to whether the State should continue the manufacture and distribution of this product was forcibly brought out. At that time, this Committee agreed on only one thing and that was they all wanted more serum.

The next question which arose was how to get sufficient financial backing to make the serum and distribute it and make a really serious attempt to study the problem and to determine once and for all whether the State should undertake the manufacture and distribution of such a serum on a state-wide basis. Doctor Bigelow and Doctor White drew up a plan for a rather elaborate study of lobar pneumonia in this State and went to New York, where they presented their plan to the Commonwealth Fund of that city. This philanthropic organization agreed to finance the pneumonia work in Massachusetts for a period of three years with a possible extension of two years more if we could show at the end of the first three years that something worthwhile had been accomplished. For the purposes of this study, we feel that we have a reasonable right to be somewhat arbitrary about the distribution and use of the serum, inasmuch as the entire expense of the pneumonia work that is being carried out in this State under the plan is

*Delivered by Dr. Heffron at the Boston Medical Library, January 27, 1932, at the combined meeting of the Boston Medical Library and Suffolk District Medical Society.

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being borne by the grant of money given us by the Commonwealth Fund of New York City and not by public funds.

Our present program briefly consists of three things:

First, an epidemiologic study. We have collected over 40,000 death certificates of persons dying of all forms of respiratory disease at various intervals during the past 40 years. We have data from some 8000 hospital records of patients who have had either lobar or bronchopneumonia in many of the hospitals in Massachusetts during the past three years. Doctor Smillie of the Harvard School of Public Health has been studying the problem of pneumococcus carriers among persons in contact with pneumonia cases and among the normal population.

Secondly, the production of serum. The antitoxin and Vaccine Laboratory at Forest Hills, of which Doctor Benjamin White is the director, is producing antipneumococcic serum on a large scale and where research work is being carried on so that the potency of this serum may be increased. This work is taking a considerable amount of money and requires a tremendous amount of bacteriologic work.

Thirdly, there is a clinical side to this problem—that of getting serum into the patient. We feel that we know fairly well now that unless serum is given to any patient with lobar pneumonia during the first four days of illness, its administration is not worthwhile. If one is unable to get antipneumococcic serum into the patient during the first four days of his illness, we feel it is probably better not to use the serum at all, for the beneficial effects of such serum after the fourth day of illness are practically nil and the material is too expensive to be used in the later stages of such cases. It has been found that among the pneumonia patients who enter the hospitals in the Metropolitan area, the average duration of the disease is from four to five and a half days. This same problem confronts those using antipneumococcic serum in every large city. Therefore, the problem of treating patients during the first four days resolves itself into one of placing antipneumococcic sera at the command of the local practitioner who sees his patient in the early stages of the disease.

With the advice, consent and direction of our Advisory Committee there have been nine or ten areas in various parts of Massachusetts, designated for the purpose of studying lobar pneumonia and making serum available to the local practitioners in those sections, with the hope that we should be able to lower the mortality of lobar pneumonia due to the pneumococcus Types I and II in those regions. In and around Boston, serum is available from seven hospitals.

Our plan is this. In each area outside of Boston, the technician from the laboratory of the hospital chosen to coöperate with us in this work is sent to Boston and given a week's training in pneumococcus typing at the City Hospital under Doctor Sutliff. All pneumococcus typing done in the designated areas, which are Pittsfield, Great Barrington, Worcester, Beverly, Ayer, Malden, Newton and Brockton, is done in the one or more central hospitals within the area whose technicians have been trained to obtain uniform results in typing. Through our Advisory Committee certain physicians—generally three or four in each of these areas—have been designated as our clinical collaborators. In the past, attempts were made to give antipneumococcic serum to all practitioners who requested it in and around Boston and for the amount of money expended the return was practically negligible so far as we could determine. In view of the fact that we are spending the money of the Commonwealth Fund, which organization naturally desires to see some results from the money so spent, we are practically forced to distribute the serum to the few physicians in each chosen area who have been designated by the Advisory Committee for this purpose. Any practitioner in any of those areas who has in his practice a case which he thinks may be lobar pneumonia may call one of these clinical collaborators in consultation. The collaborator called in consultation may charge his usual fee for such a service. However, if the patient is unable to pay his fee, the Commonwealth Fund has agreed to pay the collaborator fifteen dollars for such a consultation and six cents a mile for mileage. The collaborator called will give to the physician a sufficient amount of antipneumococcic serum free of charge for the treatment of his patient or if the doctor requests it, the collaborator may give the serum for him. There have been some criticisms of this plan—chiefly on a financial basis. We feel that when a doctor gives four or five hours of a day or night to treat a patient with serum he should have a certain amount of financial return for the time expended.

The only thing we ask in return for the serum so distributed is a case record properly filled out for each patient so treated and in the areas where this Service is operating, records of treated patients are being obtained. To date we have found that the mortality of patients with Type I lobar pneumonia who have been treated with serum is in the neighborhood of 11% and the mortality of our Type II patients who have been treated is around 15%. In both instances, these mortality rates are about one-half of the expected mortality of the disease for that particular type of organism and we feel that these results, which are about as good as anyone has ever obtained from antipneumococcic serum, are really excellent, inasmuch as the reports are coming from many different areas throughout the State.

MEDICAL PROGRESS

PROGRESS IN THE STUDY OF CARDIOVASCULAR DISEASE IN 1930

BY PAUL D. CAMP, M.D.,* AND HOWARD B. SPRAGUE, M.D.*

INTRODUCTION

IN presenting the annual review of the progress in the study of cardiovascular disease for the year 1930 a very large amount of material has been sifted before choosing representative papers for recognition. Even with this selection we are presenting abstracts of 226 articles. These indicate the wide interest in problems of the circulation and new methods of study. While no striking discovery can be credited to the past year's work, it is hoped that the review will show the advances of importance in many fields of investigation.

ANATOMY AND PHYSIOLOGY

Whitten by means of a modification of the celluloid corrosion technique, demonstrated the circulation of the intraventricular and intraauricular septums and drew the following conclusions: (1) At birth and during the latter part of fetal life the right and left ventricles are about equal in vascularity. (2) By the end of the second year the left ventricle has become definitely more vascular than the right. This preponderance increases until about the tenth year, after which no increase of vascular preponderance can be demonstrated. (3) There is a definite preponderance of venous circulation of the left ventricle as compared to the right. He suggested that there is some relation between the thickness of the ventricle wall and its blood supply in the absence of marked arteriosclerosis.

The same author discusses the relation of distribution and structure of the coronary arteries to myocardial infarction and believes that the fact that the injury in infarction is almost always to the left ventricle, whereas the right ventricle rarely is involved, seeming to depend on the differences in the anatomic structures of the arteries of the two ventricles.

Yater and Birkeland studied the elasticity (extensibility) of linear strips of 100 human aortas and concluded that the extensibility increases from childhood to 27 years of age and after this steadily decreases irrespective of sex, diastolic blood pressure, degree and extent of grossly estimated arteriosclerosis, thickness of wall and cause of death.

Christie from a study of necropsy material found the following facts, that closure of the foramen ovale occurred prior to 12 weeks after birth in 87% of 590 normal hearts in infants ranging in age from one day to one year, and that closure of the ductus arteriosus occurred prior to eight weeks after birth in 88% of normal hearts in infants one day to one year old.

Halpert described a peculiar anomaly, an arteriovenous communication between the right coronary artery and the coronary sinus with aneurysmal dilatation of the parts involved. The condition was an incidental finding at necropsy in a male adult who did not present cardiac signs or symptoms during life.

Batson and Bellet stimulated by the desire to explain better the little understood method of capillary irrigation in double coronary occlusion, investigated experimentally the conditions simulating double coronary occlusion, and concluded that with low pressure in the capillary bed, the flow in veins during atrial systole is probably toward the capillary bed, the bed being emptied during ensuing ventricular systole. In arterial occlusion this could give a flow and ebb circulation for myocardial capillaries via veins.

Patten studied the changes in circulation following birth and concluded that on the basis of present available evidence the current conceptions as to the occurrence at the moment of birth of abrupt re-routing of blood rest on insufficient evidence. He believes that the volume of blood circulating through the lungs at the close of fetal life is adequate for the respiratory demands of the newborn as soon as the lungs are properly ventilated, and that there is no radical circulatory upheaval. The power of the pulmonary circuit as it increases brings about at approximately the end of the first month a new functional balance in intracardiac pressure, which in turn causes the foramen ovale and the ductus arteriosus to cease functioning. Following this increase in pulmonary circulation and closure of the fetal blood passages there is a gradual increase in the left ventricular musculature, reaching the ratio of adult preponderance by the seventh year of life.

Lewis and Landis studied the hands in a fully developed case of acrocyanosis and concluded that the essential disturbance of the cutaneous circulation was due to a vasomotor spasm of the cutaneous arterioles, which in turn causes a diminished inflow of blood, and coldness of the skin, and that cyanosis results from this decreased blood flow and also in part from the increased blood content of the skin.

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Weiss and Frazier from their studies concluded that the extent of the surface capillary bed of the skin of the forearm was essentially the same in a group of control subjects without vascular disease as in patients with arterial hypertension or arteriosclerosis.

Lewis investigated the reactions of the human skin to cold and found that vasodilation occurs when the finger is immersed in cold water and that there is a rise in temperature above the normal finger after the finger is removed from the cold water. He suggests that the reaction is due to sensory axon nerve reflex, and that there is evidence of an "H-substance" released when the skin is cooled, starting an axon reflex. The mechanism is helpful in cold weather, the evidence being that degeneration of sensory fibers causes loss of normal blood supply, thus resulting in trophic lesions.

Grant described numerous direct communications between the arteries and veins, which are constantly present in the rabbit's ear. He studied these structures and their reaction to stimuli during life and found that they react by dilatation to mechanical stimulation, histamine, acetycholine and cold. Adrenalin constricts them. He described their nerve supply and reaction to nerve impulses. He concluded that these structures are important in aiding the regulation of the animal's temperature.

Klein investigated the circulatory minute volume in human beings by Fick's method of obtaining mixed venous blood by means of catheterization of the heart. He introduced the catheter under fluoroscopic control and succeeded in putting it in the hearts in 11 of the 18 cases. In two cases it went as far as the apex of the right ventricle, in one case into the inferior vena cava. The patients studied had no sensation in the heart. He studied three cases as regards the minute volume output and found the following: first Case (Multiple sclerosis) showed normal heart minute volume 4.46 liters; second Case (aleukemic myelosis with secondary anemia) showed minute volume 6.67 liters; and third Case (neuritis) showed minute volume 4.3 liters.

Diaz et al reported catheterization of the right auricle in a patient who had syphilis of the nervous system. They introduced a cannula into the cephalic vein and passed a ureteral catheter through the cannula without difficulty into the right auricle.

Powers produced experimentally vegetations of acute endocarditis in dogs by electrosurgical traumatization of the mitral valve and subsequent inoculations with cultures of Streptococcus viridans. He compared the pathology of these vegetations to the vegetations of subacute bacterial endocarditis in man and concluded that they were similar.

Wiggers et al studied changes in ventricular areas before and after production of experimental aortic insufficiency (while the heart was kept at a constant rate) by successive photographs of the exposed heart, using a moving picture camera. They concluded that approximately one-third of the discharge during systole regurgitates through insufficient valves during diastole.

Smith et al as a result of their observation of ten cases, suggested that there might be a decrease in the output of the heart with the onset of congestive failure.

Pilcher, Calhoun et al made a study of the potassium content of skeletal muscle obtained by biopsy and concluded that the water content of such muscle in patients with cardiac edema was invariably increased and that these changes usually persisted after the signs of edema had disappeared. The potassium content of the wet muscle was abnormally low and that of the dry muscle usually diminished. The administration of potassium dibasic phosphate was followed by a rise in potassium content of the muscle.

Landis by means of micro-injection technique studied capillary pressure in Raynaud's disease and found that during the period of spasm the pressure at the summit of the capillary loop is between 8 and 10 mm. of mercury when the loop is at the level of the sternum. As the arterial spasm relaxes, the capillary pressure rises to between 32 and 45 mm. and the pulse pressure becomes conspicuous. He stated that the spasm is situated on the arterial side of the capillary network.

Kroetz from his studies of the effects of oxygen and carbon dioxide inhalations on the circulation of human beings concluded that in healthy persons the difference between the oxygen content of the arterial blood and venous blood was decreased, resulting in a definite increase in the minute volume of the circulation. Oxygen inhalation in persons with cardiac disease produced an increase in oxygen content of the arterial blood and an elevation of the low minute and beat volume in decompensation.

Hyman has made studies of the fetal heart by means of the phonocardiogram and has demonstrated that the occurrence of cardiac arrhythmias in uterine life is not infrequent. He described the types of irregularity and discussed the possibility of therapy in some types.

Leriche and Fontaine reported their observations in three patients. In one patient a typical attack of angina pectoris was produced by irritation of the stellate ganglion during operation. In two other cases an attack during an operation was inhibited by the injection of a solution of procaine hydrochloride into the ganglion. The authors believe, after considering their own experience and the literature, that the rôle of the stellate ganglion as a reflex center in angina

pectoris and possibly other syndromes pertaining to the heart and lungs is established.

Livingston presented experimental evidence from which he concluded that pain may arise from abnormal spasm or distention of the walls of blood vessels.

Turner reported the case of an elderly woman with enlarged heart who had insulin shock for the first time, accompanied by tachycardia which promptly caused a severe cardiac pain. This recurred twice under similar circumstances. He stated the necessity for caution in the administration of insulin to diabetics who may have coronary disease.

Sutton and Lueth concluded from their experiments with dogs that distention of various parts of the cardiovascular system did not produce pain and that the only mechanism capable of producing cardiac pain was that of lessened blood flow to the myocardium.

Ernstene and Blumgart made a study of 22 patients with uncomplicated myocardial failure of the congestive type, making 82 comparisons of the height of the venous pressure and the degree of orthopnea. In general they found that the higher the venous pressure the greater the orthopnea and that if the patient's head was simply elevated by flexion on the thorax a definite relief from respiratory distress occurred. This procedure favors diminution of the cerebral pressure but has no effect on the vital capacity of the lungs and strongly favored their theory of the mechanism of orthopnea in such cases. Their theory may be stated as follows; that the orthopnea is based on the fact that increased cerebral venous pressure diminishes intracranial blood flow, thereby favoring increased anoxemia of the respiratory center.

Forti recalled the fact that in determining arterial pressure, in many examinees the sphygmotonometric values obtained at the first trial are modified (usually lowered) at later trials and emphasized that failure to take this into account may lead to erroneous inferences.

Ellis and Weiss studied two cases of traumatic arteriovenous fistula before and after operation. Estimates of the cardiac output were made on one patient with no marked change on compression of the aneurysm and a slight tendency to a decrease following the operation. The velocity of the blood flow showed no change and the blood volume was normal. There was evidence of arteriolar dilatation in the surrounding region of the aneurysm in the second patient and it was suggested that in marked cases of this sort the arteriolar dilatation may be generalized, explaining the peripheral circulatory phenomena observed in such cases.

Hickmans and Edgar reported three cases of acute rheumatism in which, before beginning salicylate treatment, they found somewhat of an increase in the blood urea, nonprotein nitrogen and uric acid over normal controls. They examined a large number of rheumatic cases during salicylate therapy and found that the blood urea and nonprotein nitrogen were still higher than normal. They discussed the possibility of salicylates increasing renal insufficiency.

Harvey and Levine reviewed 2,091 necropsy records and found thrombi of the heart in approximately 5.3% or 111 instances. They presented a detailed analysis of their findings and the significance of them.

Fishberg described three cases in which secondary malignant growths in the right auricle were accompanied by auricular fibrillation or flutter.

Fahr and Davis concluded from their experiments that arteriosclerosis without high blood pressure causes no increase in the work of the left ventricle, and that unless arteriosclerosis is associated with a narrowing of the lumen it is not detrimental to the volume flow of blood.

Bock et al estimated the least circulation time by the histamine reaction technique and found a retardation of the velocity of blood flow in the standing position in man, which they believe supports previous experimental evidence showing a reduction of the total cardiac output when the subject stands still.

Newburgh et al report their observations on a man with normal urine who developed a significant albuminuria and a twenty-fold increase in casts after living for six months on a diet of which one-third of the calories were composed of beef proteins.

ETIOLOGY AND PATHOLOGY

A. *Congenital*

Finley reported an interesting anomaly of the heart in a female 22 years of age who had been under observation for ten years. At necropsy the anatomical diagnosis was: primary; healed tricuspid endocarditis, acute vegetative endocarditis (valve of common truncus). Infarct of spleen. Embolus left common iliac artery. Secondary; truncus arteriosus communis persistans. Ventricular defect. Cardiac hypertrophy. Meckel's diverticulum. Accessory spleen.

Blackford reported an interesting case of Fallot's tetralogy with angina pectoris. He also discussed the literature.

Ariel reported postmortem lesions in the heart of a cyanotic child who died two days after birth. The heart, particularly the right half, was hypertrophied; the foramen ovale was open; the left venous ostium narrowed. At the boundary between the left atrium and the left ventricle there hung from the wall of the former and into the lumen of the latter three tumor-like structures which were adherent and had markedly narrowed the atrioventricular open-

ing. Similar structures were present in the tricuspid valve.

B. *Rheumatic Infection and Rheumatic Heart Disease*

Sheldon studied and reported on 600 consecutive cases of rheumatism in children seen in two years at an English hospital. He divided them into four groups. (I) Those with persistent rheumatic pains in limbs (not pains associated with rheumatic fever), seldom met with before the third year. Salicylates internally and externally gave little relief. In 52 of 266 children with rheumatic heart disease the above type of pain was the only evidence of disease for several months preceding the discovery of heart lesions. There was a similar history in 15 of 197 cases of chorea. (II) Those with rheumatic fever. Of 133 cases, 21 had a second attack and two had three attacks. Symptoms were not classical joint types as in adults. Seventy per cent. showed cardiac involvement afterward. (III) Those with chorea. The age incidence was later than that of rheumatic fever. Thirty-six per cent. of chorea cases also had some other form of rheumatism. Chorea was apt to develop under mental strain in bright school children and in twice as many as boys. It was likely to relapse. (IV) Those with rheumatic heart disease. Of 600 cases studied, 266 were found to have heart disease. Thirty-six of these started insidiously without preceding rheumatic history and of these 36 only one has recovered. The murmurs were variable; some went away and some progressed to a definite presystolic mitral murmur. Aortic regurgitation was present in 6 per cent. Tonsillectomy had been done in 17 per cent. of the above-mentioned 266 cases before any signs of rheumatic heart disease were discovered.

Campbell and Warner reported on their detailed study of 250 rheumatic children in England and presented the following facts: The poorest children were most commonly affected. Fifteen per cent. of children above 3 years of age attended their clinic because of rheumatism; the commonest age at onset was 6-7 years, somewhat later with chorea; a positive family history was obtained in 60 per cent. of the rheumatic group as compared to 20 per cent. of the controls; debility was a great predisposing factor; tonsillitis may also predispose; a systolic murmur was present in 50 per cent. of the cases at the height of the disease; this was less common in the chorea cases. Permanent signs of heart disease remained in 15 per cent. of out-patient department cases. Institutional care was very beneficial and lessened the tendency to relapses; the only justification for removal of tonsils in rheumatic children is when the general health is being undermined.

Fraser reported two cases of acute rheumatic fever and described a specific form of pneumonia with typical Aschoff's nodules in the interstitial tissue occurring at the times of the attacks.

Wilson observed that the administration of streptococcus cardioarthritidis antiserum and of the soluble antigen of streptococcus cardioarthritidis did not seem to influence the clinical course in 15 children with various active rheumatic manifestations, nor to prevent the occurrence of relapses.

Small discussed the use of an aqueous extract of streptococcus cardioarthritis in the treatment of rheumatic fever and chronic atrophic and hypertrophic arthritis.

Viko studied the incidence of heart disease in the Rocky Mountain region, reporting that heart disease in this region has a relatively low mortality rate, and discussed the factors of age distribution and the low percentage in urban life. In 1000 cases he found rheumatic heart disease, 44 per cent.; thyroid heart disease, 9.3 per cent.; luetic heart disease, 11 per cent. The rheumatic type was higher in urban patients.

Perry studied the main branches of the coronary arteries in 9 cases of acute rheumatic carditis and found them usually affected by a panarteritis.

Slater reported a case of thrombosis of the coronary artery due to rheumatic fever. Characteristic electrocardiographic records of coronary occlusion were obtained.

Simon compared the resistance of the skin capillaries in 20 children without heart disease and in 20 with rheumatic endocarditis and found decreased resistance of capillaries less frequent in the normal children. In chronic recurrent and septic forms the resistance of the capillaries was often markedly decreased.

Wyckoff et al. studied eight cases, finding that disturbances of the auriculoventricular conduction time during the course of rheumatic fever showed wide and inconstant variations and that there was no proof that they were influenced by salicylate therapy.

Schlesinger discussed the important part played by tonsils in connection with acute rheumatism in childhood and the bacteriology of tonsillitis and rheumatism; he advised prophylaxis, salicylates and tonsillectomy in the treatment of this group of cases.

Levine et al. found the frequency of spells of nausea, vomiting, and epistaxis to be 3 to 4 times more frequent in a group of 100 individuals suffering from rheumatic fever or one of its allied conditions than in a group of 100 control individuals of approximately the same age, coming to a surgical clinic.

Hill and Allan concluded from information collected from the parents of 400 rheumatic children that there was slight evidence in favor

of the view that juvenile rheumatism occurs more frequently in certain families than in others.

Findlay reviewed 25 cases of rheumatic infection and found pulmonary complications and definite evidence of rheumatic carditis. He concluded that pulmonary lesions in rheumatism are of the nature of (a) an intercurrent disease—lobar pneumonia, or, (b) a terminal hypostatic or bronchopneumonia complicating cardiac disease.

Coombs discussed the diagnosis and treatment of rheumatic heart disease in its early stages. He advised careful examination of every sick child, especially those with tonsillitis, believing that any child with a rheumatic manifestation should be regarded as a potential cardiac case. He then discussed treatment and results in 635 cases, advising salicylates, prolonged rest, good diet, iron, cod liver oil, sunlight and fresh air. Tonsillectomy should be done if the tonsils are obviously diseased.

Coates from his studies on 300 consecutive cases of multiple infective arthritis estimated the occurrence of orthodox rheumatic infection (as judged by carditis or subcutaneous nodules) to be about 5 per cent.

Clawson concluded from his studies that the relationship between allergy and the polyblastic type of reaction, as seen in human rheumatic and experimental streptococci lesions, appeared to be not a qualitative but a quantitative one.

Goldring and Wyckoff showed from their studies of 16 cases of acute rheumatic fever that there was an increase of protein and formed elements in the urine (Addis technique), and that the blood cells in the sediment differed from normal in being laked and crenated in their appearance. This abnormal increase persisted for 4-10 days after the acute attack, the degree of abnormality being directly related to the height of the temperature.

Wilmer from his studies of 157 hospital records on Chinese with pictures of mitral stenosis, concluded that since healthy persons of asthenic build often showed the same cardiac outline and electrocardiogram as patients with mitral stenosis, the diagnosis should depend almost entirely on clinical evidence.

C. *Acute and Subacute Bacterial Endocarditis*

Sansby and Larson reported a case necropsy of acute bacterial endocarditis in an infant of 3 weeks, normal at birth, whose mother became ill with a grippe infection shortly after delivery.

Winkelman and Eckel reviewed the literature and described 13 cases of bacterial endocarditis in which lesions of the central nervous system were demonstrated. Eight cases were of the acute bacterial type (mostly pneumococci); five were subacute with streptococcus viridans. They discussed the lesions found in the brain and spinal cord.

Sprague concluded from his study of 20 cases of subacute (streptococcus viridans) endocarditis that patients with rheumatic heart disease in whom mitral regurgitation persists without the development of evidence of mitral stenosis of marked degree are more likely to acquire subacute bacterial endocarditis than are those in whom the valve becomes obviously stenotic within a few years. In cases of questionable malignant endocarditis the ausculatory evidence of the mitral valvular condition should be considered in the diagnosis.

D. *Angina Pectoris*

Wood and Wolferth concluded from their studies of 27 cases of angina pectoris that the electrocardiogram gives evidence of some unusual change of cardiac action during a certain percentage of anginal attacks, and that the evidence is at least suggestive that this change is due to anoxemia of a section of the myocardium.

Hyman found that in 12 patients with acute influenzal infection 9 developed angina pectoris, having had no symptoms of angina before, and concludes that postinfluenzal angina pectoris must be considered as a not uncommon sequel in this type of middle-aged patients.

E. *Coronary Disease and Thrombosis*

Covey found in the study of 284 necropsies that 41, or 14.4 per cent., presented appreciable evidence of coronary disease.

Leary and Wearn reported two cases of essential closure of both coronary orifices. The lesions were slowly progressive and there was no evidence of myocardial damage, the patients being able to work until the time of death.

Burton et al. reported four cases of coronary disease studied with electrocardiograph and at postmortem. They concluded that in the light of present knowledge the electrocardiogram findings were not of a definite localizing nature.

Berisford and Earl reviewed and discussed 46 cases of spontaneous cardiac rupture and believe that recent acute infarction of the heart is almost invariably the underlying cause. They discussed the mechanism of the rupture.

Plenge described the results of postmortem examinations on two patients who smoked excessively. He noted a peculiar type of coronary sclerosis and believed that the functional changes caused by nicotine gradually brought about the anatomical change which he found.

Klotz and Lloyd reviewed 44 cases of coronary disease studied at necropsy and concluded that coronary disease usually affects men between the ages of 55 and 60 and is the outcome of an endarteritis associated with atheroma and calcification.

Conner and Holt reported their study of 287 cases of coronary thrombosis in regard to the subsequent course and prognosis. They found the following: Sex—85% male, 15% female;

one-third of the cases had the first attack before the fifty-first year and three-fourths before the sixty-first year; there was antecedent hypertension in 34%, syphilis in 14%, diabetes in 10%; of the 287 patients, 117 known to be living and 142 dead, the immediate mortality of the first attack was 16.2%; 117 recovered; 75% were in good health at the end of the first year, 56% at the end of the second year, 21% at the end of the fifth year and 3.4% at the end of the tenth year. One patient remained in good health for 17 years and died in a second attack 18 years after the first. Sixty-two per cent. of the patients had no circulatory symptoms prior to the first attack. One attack occurred in 67%, 2 attacks in 24%, 3 attacks in 4%, 4-7 attacks in 5%. Of patients having only one attack 50% were living, 33% in good health. The immediate mortality was higher if the initial symptoms were severe than if they were mild, yet almost one-third who recovered had symptoms of very severe character.

F. *Blood Pressure.* Hypertension and Hypotension

Hypertension

Weiss and Ellis have reviewed the dynamics of the circulatory mechanism in arterial hypertension and have presented a study of 30 patients. They write, "Although the average resistance of the arteriolar system of the greater circulation was twice as great in the patients as in the normal control subjects, the circulatory blood volume, the cardiac output per minute, the arm to face velocity of the blood flow, and the main velocity of the circulation were either normal or slightly below normal. The calculated volume of the blood in the lungs in hypertension is increased. The volume content of the arterial and capillary bed of the greater circulation in hypertension is probably reduced. Although the peripheral resistance was increased to twice normal, the estimated work of the left ventricle of the heart in hypertension was only 41% greater than in normal subjects. This work corresponds to an energy consumption of 10.7% of the basal metabolism. . . ." "A satisfactory explanation for the dynamics of the circulation in patients with hypertension studied is that due to the abnormally accentuated arteriolar resistance, a high arterial and arteriolar pressure is essential to reëstablish the normal capillary blood flow and pressure in the vital organs. The measurements and observations do not bear out the hypothesis that the loss of elasticity of the great arteries, or increased cardiac output or increased circulatory blood volume, or hypoventilation and decreased blood content of the lungs is responsible for the pressure of hypertension."

Foster reported observations on his practice in China and New England noting that the most conspicuous difference between the two countries is the rarity of hypertension in China and its frequency here. He discusses the possible etiological factors which might account for the differences.

Levine has called attention to a group of patients usually treated for heart disease in whom the underlying cause is a latent and unrecognized hyperthyroidism. He discussed the diagnostic criteria and the fact that many of the patients are relieved completely or at least greatly benefited by a subtotal thyroidectomy.

Blackford, Bowers and Baker have made a study of 401 hypertensive patients found in 10,000 clinic examinations. They discussed the age, sex and family history occurrence in this group. In a follow-up study of this group they found 202 cases (20 were dropped as unsuitable for analysis) which they followed from five to eleven and one-half years to show a gross mortality of 50% (male 70% and female 30%), and an average duration of life after the first examination of 32 months for males and 44 months for females. The known causes of death were: 31 from cerebral complications, 25 from heart disease and 18 from uremia. They found no tendency to recovery in hypertension.

Palmer made a study of 3,598 records of routine physical examinations done in the Department of Hygiene at Harvard and found that slightly more than 10% of these cases showed systolic blood pressures of above 140 mm. mercury. He studied the persistence of the high blood pressure and concluded that if hypertension is found at 20 years it is somewhat more likely to be persistent after ten years than to develop *de novo* during the interval.

Mueller and Brown made studies of blood pressure at hourly intervals day and night on patients under hospital régime; 26 patients had normal or subnormal pressures and 61 had hypertension. They found a rhythmic change in the level of the pressure with a gradual rise during the day, the highest peak being reached at about six P. M.

Harris and Lipkin write, "The assertion that cholesterin causes a direct rise of pressure becomes untenable in the light of our observations. An enormous increase in blood cholesterin does not raise the pressure."

Stieglitz stated that the prognosis in individual instances of arterial hypertension should be based on several variable factors such as etiological background, cardiac and renal reserve and the stage of the disease, and need not necessarily coincide with the statistical average prognosis for groups of hypertensive persons.

Murphy and Grill have studied malignant hypertension and analyzed the data of 16 cases; 13 died and 12 were autopsied. They discussed the clinical and pathological data and con-

cluded that malignant hypertension differed from hypertension of benign form only in degree.

Brown made determinations of the blood pressure three times daily over a period of three years in a patient with essential hypertension. He noted a greater separation of the curves of morning and evening systolic pressures in the summer months, and that they tend to approach each other in spring and autumn. Mean daily systolic pressures indicated a rise on Sunday evening, and gradual lowering during the week.

Hypotension

Wasserthal, stimulated by the attempt of several authors to formulate definite syndromes for conditions of idiopathic hypotension, observed the cases which came to his attention in a period of 20 years. After ruling out cases of clear etiology he found a large number of cases for which no causes could be found, such patients enjoying perfect health, the condition being practically certainly of benign nature.

Mills presented data which were a strong suggestion of the climatic suppression of the metabolic diseases in those tropical and subtropical areas where other metabolic functions are lowered by the heat. He also discussed the low blood pressure of Chinese.

G—Miscellaneous

Aneurysm

Jacobi reported a case of multiple saccular aneurysms of the bronchial arteries of definitely syphilitic etiology in which death resulted from tracheal occlusion due to the aneurysms.

Reifenstein and Allen reported an unusual case of aneurysm of the thoracic aorta in which previous to death the protruding aneurysmal tumor measured 70 cm. around its base and was elevated 11 cm. above the level of the sternum. It had probably been present for more than seven years. At autopsy no point of rupture was found in the aneurysmal wall.

Asthma

Unger very carefully diagnosed 74 cases of true bronchial asthma and found normal electrocardiograms in 31%; in the remainder there was found a great frequency of low R I and high R III, that is, a tendency toward right axis deviation.

Laubry reported two cases of sudden death during an attack of asthma in patients in whom careful and repeated examinations had revealed normal hearts. He suggested asphyxia as a possible explanation of the deaths.

Trauma

Shoemaker and Eckels reported a case of a bullet lodged in the myocardium in which there was rapid response to emergency shock treatment and in which complete recovery occurred without operative removal. They reviewed the literature and concluded that the great majority of such cases required no operative intervention.

Laird and Borman reviewed the literature on traumatic asphyxia and added five of their own cases. They discussed the signs, symptoms and factors responsible for the morbidity of the condition, concluding that the cyanosis is probably essentially due to capillary and venous dilatation and engorgement.

Beriberi

Keefer studied a group of patients with beriberi, paying particular attention to the cardiovascular system, and demonstrated that the patients who developed cardiac insufficiency are the ones who have least involvement of the nervous system. He believes the mechanism of failure is brought about by a deficiency in vitamin B causing a change in the heart muscle characterized by cardiac enlargement and a deficiency in contractile power.

Hyperthyroidism and Myxedema

Blumgart et al. continued their studies on the velocity of the blood flow and present 27 series of measurements made in 13 patients with thyrotoxicosis, in order to correlate the clinical manifestation with changes in velocity of blood flow through the lungs, basal metabolic rate, pulse rate, venous and arterial pressures and vital capacity. Measurements were made with high basal metabolic rate compared with subsequent measurement with the basal metabolic rate reduced. They concluded that there was a general but inexact relationship between degree of elevation of pulse and increase of basal metabolic rate. The velocity of the blood was strikingly increased in hyperthyroidism and the pulmonary circulation the fastest recorded in man, the increase being proportional to the degree of elevation of the basal metabolic rate. This emphasizes the strain under which the heart labors in the thyrotoxicoses. In 9 patients with thyrotoxicosis but without circulatory failure, the basal metabolic rate was plus 33 average, while the velocity of the pulmonary blood flow was slightly lower. The fact that the latter group of patients experienced dyspnea on slight exertion emphasizes the close interdependency of respiratory and metabolic mechanisms. When the basal metabolic rate was lowered by giving compound solution of iodine or by operation the velocity of blood flow was correspondingly slowed.

The same authors made similar detailed studies of 7 patients with myxedema. They concluded as follows: The pulse rate was low and bore a rough relationship to the basal

metabolic rate, and as the basal metabolic rate rose the pulse approached normal. The diminution in vital capacity was not closely related to the basal metabolic rate. The velocity of blood flow was strikingly slow in every subject and corresponded closely to the degree of lowering of basal metabolic rate. After thyroid was given by mouth the rise in basal metabolic rate and increase in velocity of blood flow to normal took place simultaneously and closely paralleled each other. The slowing of blood flow was almost as much as that in rheumatic heart disease with auricular fibrillation and congestive failure. None of the myxedematous patients showed signs of cardiovascular disease. The great increase in velocity of blood flow and consequent increased cardiac work that occurs when the basal metabolic rate is raised to normal affords a rational explanation of the clinical manifestation of cardiac insufficiency which occurs not infrequently following thyroid gland therapy.

The comparison (with facts found in thyrotoxicosis) indicates that increased velocity of blood flow in thyrotoxicosis is due to an increase in basal metabolic rate rather than to a specific toxic effect on the heart. The findings emphasize the close interrelationships between blood flow and basal metabolic rate and throw additional light on the degree and manner in which the circulation is associated with increased and decreased basal metabolic rate.

Lahey from his study of the end results of 142 thyrocardiacs concluded that thyroidism in itself does not by its direct action upon the heart produce destructive changes in the heart; that practically all cases of thyrocardiacs with decompensation may, with only a reasonable risk, be submitted to surgery and the possibility of restoration of cardiac capacity is extraordinary.

Simonds and Brandes found that feeding 10 gm. of desiccated thyroid daily to healthy dogs can cause an actual hypertrophy of the heart.

The above authors presented experimental data from which it appeared to them that in starvation the heart and kidneys lose weight in about the same proportion as the body as a whole, whereas the liver loses in a distinctly greater proportion. In experimental hyperthyroidism the liver practically maintains its original weight in spite of loss of glycogen. The relative, if not absolute, hypertrophy of the heart, liver, and kidneys in experimental hyperthyroidism is probably due to the combined effect of increased function and augmented blood flow in each of these organs in this condition.

Syphilis

Turner from his study of 10,000 ambulatory patients above 12 years of age who are known to have syphilis concluded as follows in regard to race and sex distribution: Clinically recognizable syphilitic affections of the cardiovascular system, excluding cerebral lesions, occurred in 10% of all late cases with a ratio of 2 males to 1 female and 2 Negroes to 1 White. Uncomplicated aortitis with or without aneurysm occurred much more frequently in males and in Negroes. Aortic regurgitation occurred nearly twice as commonly in Whites as Negroes. Syphilitic angina pectoris was rare, more common in Whites and males respectively than in Negroes and females.

Levine reviewed 40 cases of syphilitic aortitis and found 12 instances of negative Wassermann reaction and 4 cases in which there was no history or evidence of either aneurysm or aortic insufficiency. He stated that these might have been diagnosed in life by a more thorough laboratory and clinical study.

Willius studied 100 carefully selected cases of syphilis of the cardiovascular system and reported his findings as follows: Group I—Syphilitic aortitis, Group II—Syphilitic aortitis with aortic insufficiency, Group III—Thoracic aneurysm. The number of cases in the respective groups were 17, 59, and 24, the average age of onset 31, 26 and 27, the average age occurrence of death from cardiac disease 54, 49, and 53, the average duration of the course of the disease 23, 23 and 26.

Saphir and Scott from their series of 107 cases of syphilitic aortic insufficiency studied at necropsy stated that "The primary and earliest lesion in syphilis of the aorta and larger arteries is an obliterative endarteritis of the vasa vasorum of the adventitia with perivascular infiltration of lymphocytes." They discussed the etiology of syphilis of the aorta and aortic valves. One out of 3 cases in their series showed luetic involvement of the mouths of coronary arteries, invasion of the myocardium being rare.

Bach and Worster-Drought studied and compared a series of 25 cases of neurosyphilis and a series of 25 cases of cardiovascular syphilis. Of the former group only one showed definite clinical evidence of syphilitic aortitis while there were suggestive signs in another case and of the latter group, 4 showed evidence of neurosyphilis.

Warthin studied the rôle of syphilis in the etiology of angina pectoris, coronary arteriosclerosis and thrombosis, and of sudden death. He concluded that (1) active syphilitic lesions of the larger coronary branches are infrequent and rarely produce occlusion or lead to coronary thrombosis. (2) Arteriosclerosis of the coronaries, myocardial infarction and angina pectoris are more frequent in latent syphilis, and lues predisposes secondarily to coronary disease and arteriosclerosis. (3) Sudden death was

almost five times as frequent in the syphilitic as in the non-syphilitic autopsies.

Givan from a study of 417 cases of congenital syphilis with ages varying from 3 months to 42 years found no reason to believe that in any of these was heart disease caused by lues.

Horine and Weiss concluded from their review of 666 patients with essential hypertension and a control group of 2000 non-hypertensive patients that syphilis cannot have any etiological bearing on essential hypertension.

Diabetes

Joslin reviewed 97% of the cases of true diabetes seen by him between 1894 and 1930 in regard to arteriosclerosis. He stated that now every other diabetic dies of arteriosclerosis and the rise in arteriosclerosis may be explained by the fact that fewer patients die of diabetic coma and more live to an old age. Increase of arteriosclerosis with duration of diabetes is especially frequent in Jewish patients. Arteriosclerosis is present in youthful diabetics, even in children, as demonstrated by x-ray. He discussed the retinal changes and mentioned pathology which is to be presented in a later paper.

Shepardson studied a group of 30 patients under 40 years of age who had had diabetes for at least five years, to determine the incidence of arteriosclerosis as evidenced by x-ray. The average age of patients was 23 to 24 years with an average duration of the disease of 6 to 9 years. Thirty-six per cent. gave x-ray evidence of vascular sclerosis. The average blood cholesterol was found to be markedly lower than those heretofore obtained, and paralleling this the incidence of arteriosclerosis was greatly reduced. Definite lessening of the intensity of damage resulting from prolonged exposure to diabetes consequent to the use of insulin has resulted in marked lowering of the blood lipoid content and, with the above, apparently necessitates the assumption that altered metabolism is a morbific factor in the development of vascular disease in association with diabetes.

Buerger's Disease

Silbert found that of 460 patients with Buerger's disease who were not treated 64% had amputation of the extremity during the first five years of illness, 46% had amputation of a second extremity during the next ten years. He treated 225 typical cases and 64 borderline cases with repeated intravenous hypertonic salt solution and concluded that the method was safe and effectual. Eighty-eight per cent. of the 289 patients treated were reëxamined in the past year; 87% of these have shown symptomatic improvement and 67% have been able to return to work. Only 83 of all patients treated have required amputation. Cessation of the use of tobacco is necessary for satisfactory results.

Samuels and Feinberg from their series of 50 cases of thromboangiitis obliterans studied in regard to coronary involvement, concluded that an accurate diagnosis of coronary thromboangiitis obliterans is permissible only after demonstration of the typical arterial lesion at autopsy.

Athletics

Richards made a roentgenologic study of a series of men on cross-country teams in order to determine the size of the heart at the end of strenuous races and at rest. He reported on 20 of these cases which were typical of the remainder of the series (whose x-rays unfortunately were destroyed by fire) and found that there was an average decrease in the transverse diameter of the heart of 0.67 cm. after racing in 19 cases, and that the hearts of the distance runners who had many years of competition showed the greatest decrease in transverse diameter after racing, not infrequently amounting to as much as 2.5 cm. He also noted that the hearts of the men in collapse after the race showed, in addition to the decrease in transverse diameter, a markedly diminished systolic excursion, and as the man's condition improved the excursion became greater and greater until at the end of an hour or more the heart in some cases resembled one that was acutely dilated.

Spinal Deformity

Coombs reported and discussed the signs and symptoms of four cases of long-standing angular deformity of the spine associated with cardiac failure; on two of the cases postmortem examinations were made.

Reid reported a case of cardiac hypertrophy and dilatation associated with marked spinal deformity. He remarked that this association has been largely ignored in Anglo-Saxon literature and recommends proper orthopedic treatment to prevent such deformities.

Paroxysmal Tachycardia

Strauss analyzed 63 cases of paroxysmal ventricular tachycardia found in the literature and added 2 new cases seen by himself. He found no common etiological factor, but 84% had organic heart disease, and of these, 60% had been treated with digitalis prior to the onset of tachycardia. In the absence of organic heart disease the prognosis is good. He stated that a probable bedside diagnosis could be made and the condition treated with quinidine, resulting uniformly in an ending of the tachycardia.

Luria and Wilensky reported a case of paroxysmal tachycardia in a woman who was hypersensitive to raisins and honey, in whom attacks were usually brought on by the ingestion of large amounts of sweets, particularly those mentioned. They suggested that this and some other

cases of paroxysmal tachycardia may be due to allergy.

Auricular Fibrillation

Hurxthal summarized his experiences in 59 cases of postoperative paroxysmal auricular fibrillation in thyrocardiacs and 55 cases of established auricular fibrillation in which digitalis was administered for the purpose of comparison as follows: "In cases of postoperative paroxysmal auricular fibrillation in thyroid patients, digitalis will slow the pulse, but it does not exert a favorable action in stopping the paroxysms. Quinidine proved successful in all cases of this type. In cases of established auricular fibrillation associated with goiter, quinidine was permanently successful in 88% of those treated with this drug. Iodine and thyroidectomy caused cessation in 15% of all operative cases during the period of hospital observation. Iodine, thyroidectomy, and quinidine resulted in permanent return to normal rhythm in 70% of all operative cases, at least during the time which the authors have observed them. In hyperthyroidism uncomplicated by cardiovascular disease a return to normal rhythm may be anticipated in practically 100% of cases."

Cookson considered that the nonrheumatic (commonly called arteriosclerotic) and the rheumatic types of auricular fibrillation form the largest two groups from an etiological standpoint and that the expectation of life is greater in the nonrheumatic group. He pointed out several complications and their effect upon the prognosis.

Parkinson and Campbell studied 200 cases of paroxysmal auricular fibrillation and found the etiological factors to be as follows: 70% of cases had structural heart disease due in about equal proportions to rheumatism, high blood pressure, and primary myocardial disease; goiter was causative in 15% and no underlying cardiac disease was found in the remaining 15%. He discussed the signs and symptoms, the relative importance of and indications for quinidine and digitalis respectively, and recommended surgical intervention in the goiter cases.

Hydropneumopericardium

Shackelford reported a case of hydropneumopericardium and discussed the differential diagnosis of this condition. Two-thirds of the total cases reviewed from the literature in which the results are known terminated in death.

Etiology—Statistical

Viko analyzed the cause of heart disease in 700 cases in the state of Utah and compared them with similar data from New England and Virginia. He reported the incidence in Utah to be: rheumatism 42.27%; arteriosclerosis 21.98%; hypertension 13.13%; hyperthyroidism 9.13%; syphilis 6.14%.

Horine and Weiss studied a group of 99 physicians, 26 clergymen, 20 attorneys and 17 dentists and found that the etiological types of heart disease as encountered in the learned professions did not differ from the types found in the lay population.

Apparatus

Drinker et al described the Drinker Respirator and discussed cases in which it had been used, suggesting a possibility of its value in certain types of cardiac failure.

Pregnancy

Reid reviewed the statistics concerning the mortality from cardiac disease in pregnancy and concluded that it is but slightly greater than that of cardiac patients of similar age in the general population and that probably 90% or more of cardiac patients survive pregnancy and parturition.

The same author called attention to the difference in various published statistics concerning the prognosis of heart disease in pregnancy. He suggested that the methods of classification might be of significance. A study of statistics of 45,320 deliveries showed 480 deaths from all causes and 48 deaths from cardiac disease.

Death After Operation

Prochnow presented data of 12,777 operations in the prewar decennium with 17 fatal cases of pulmonary embolism and 17,531 operations in the postwar decennium with 21 fatal cases of pulmonary embolism. From his study of the above-mentioned necropsies he does not believe that the impression concerning the recent increase in such fatalities to be correct but rather that they have diminished.

Neuhof and Aufses analyzed 800 consecutive necropsies performed on patients who died after operation and found the causes of death to be as follows: original disease 42%, suppuration 25%, suppuration plus pneumonia 4%, pneumonia 8%, 15.5% miscellaneous of which cardiac disease was the chief cause in this group.

Neuroses

Conner discussed the psychic factor in cardiac disorders, remarking upon the psychogenic stimuli in the cardiac neuroses, and the psychic factor in organic heart disease, recommending psychotherapy used wisely in treatment.

Diphtheria

Butler and Levine investigated the possibility of diphtheria in childhood being the cause of heart block in 20 cases of proved heart block in which the etiology could not be linked with the customary causes and found the incidence of diphtheria to be 50% as compared with 6% in 600 control surgical cases. The average age of patients with a positive history

of diphtheria was 11 years younger than the negative cases. They concluded that diphtheria in childhood appears to be an etiologic factor in the development of heart block in later years.

SIGNS AND SYMPTOMS

Schwartz stated that in 200 consecutive patients seen by him, with mitral stenosis, over 90% had the left nipple displaced outwardly and upwardly. In some cases the left nipple was smaller, lighter in color and had a more ovoid contour. He believes the sign is caused by a change in the dynamics of the circulation and resulting chest deformity.

Wedd and Wilson described a case which exhibited permanent nodal rhythm with periods of standstill of the whole heart and of high grade bradycardia, in which the condition was proved to be of vagal origin and the primary factor probably psychic in nature.

Wagener considered arterial constriction or spasm as the most dangerous element in hypertensive disease and largely responsible for the retinal, cerebral and renal complications and perhaps for the hypertension itself.

Riseman and Weiss presented a very interesting study of the symptomatology of arterial hypertension in 1090 ambulatory patients with primary hypertension and found the following symptoms in more than 20% of cases, headache in 43.3%, dizziness in 40.3%, aches and pains in 38.7%, dyspnea in 27.7%, and nocturia in 25.9%; epistaxis and migraine were found infrequently. They concluded that hypertension is not associated with a characteristic symptomatology and that most symptoms are referable to central nervous system disturbances which express vasomotor dysfunction and that psychic conditions are important in hypertension and should be considered in its treatment. They found that certain conditions, e.g., menopause, obesity and psychoneurosis, which have normal blood pressure, are associated with symptoms similar to those of hypertensive cases.

Neuda described a certain growth inhibition of the hair located behind the ear and on the occiput in patients with angina pectoris or in those who show predisposition to thrombosis.

Landau and Held found, in studying a large group of cases of syphilitic aortitis, a systolic murmur with its maximum intensity at the level of the artery on the left side of the neck and particularly at the level of the left subclavian, and at times an accentuated aortic second sound and a diastolic bruit. When the above are found together even if no murmurs are heard in the classical areas the authors believe that a presumption in favor of luetic aortitis may be made.

Gwyn stated that clefts in the sternum are not an uncommon developmental anomaly and that venous trunks of collateral circulation during cirrhosis of the liver may pass through the clefts and give rise to continuous murmurs similar to those of congenital heart disease. Such venous murmurs should be ruled out by noting the effect of finger pressure on areas immediately adjacent to the sternum.

Fowler and Baldridge presented 10 cases in which auricular fibrillation was the only evidence of cardiac disease. This condition occurred in patients from 17 to 34 years of age, and in 7 cases the fibrillation was paroxysmal in type; the etiology varied, alcohol apparently being the most common cause in this group, as in 35 cases analyzed from the literature.

Master discussed the signs, symptoms and differential diagnosis of three cases of meningococcemia with endocarditis which were seen by him. All three recovered.

Faulkner discussed the pathological significance of sinus arrhythmia in old people with organic heart disease, presenting four such cases. An analysis of hospital records showed that sinus arrhythmia in patients over 50 years of age is more frequently associated with evidence of heart disease than is normal rhythm. He supports Wedd in concluding that sinus arrhythmia may at times represent reflex response to abnormal efferent stimuli from disease of the heart or aorta.

Baker from a study of 332 consecutive patients states that the statistical evidence indicates that a patient suffering from left inframammary pain is more (not less) likely to be normal so far as the heart is concerned; he made a similar study on patients with mitral stenosis and hypertension as compared to normals and found similar results, i.e., the patients suffering with this type of pain are more likely to be normal and less likely to be suffering from either high blood pressure or mitral stenosis.

X-RAY

White discussed the clinical value of the roentgen ray in the diagnosis of cardiovascular disease. He first discussed the limitations and then the advantages of this method.

Jones described his method of injecting the blood vessels of the heart at autopsy with barium sulphate for purposes of radiologic study and discussed his investigation of three cases.

O'Kane et al described a technique for making routine standard left oblique teleoroentgenograms of the heart and great vessels and demonstrated the anatomical basis for various measurements possible with that technique. They found that certain types of cases showed a right ventricular preponderance which was unsuspected in the anteroposterior view and that the great vessels were well defined in the oblique view and could be measured and studied statistically.

Dann, after reviewing the literature, consid-

ered the data concerning the normal and pathological aorta to be very conflicting, so he decided to try to clarify the subject by establishing some basic facts. He concluded as follows: Gross anatomic study shows the superior vena cava to be located to the right and slightly posterior to the aorta. Injection of opaque media into the vessels verifies the above findings. Injection of air showed the space between the aorta and superior vena cava to be diminished in adults, and in senility the aorta over-rides the vena cava but does not surpass it. He cited one patient with a calcified plaque in the aortic wall and one with an azygos lobe, to verify the above findings in the venae.

The same author discussed the pathologic aorta. He mentioned 4 types of heart and aortic diseases, namely: — arteriosclerotic, syphilitic, hypertensive and rheumatic, and described the character of the uncoiled aorta in these conditions. He concluded that the aorta may be pathologically uncoiled as a result of senile sclerosis, hypertensive heart disease and lues but the roentgen appearance of the aorta per se cannot be used for differential diagnosis.

Rigler presented four cases in which visualization of the esophagus was helpful in determining the presence or absence of left auricular enlargement, and therefore an aid in making a correct diagnosis.

Hampton et al presented the method of study of the aorta which is used at the Massachusetts General Hospital believing it to be valuable in determining the presence or absence of aortic dilatation even when the clinical impression is not known to the roentgenologist. Roentgenoscopy at seven foot tube screen distance is considered a valuable aid to accurate position for teleoroentgenogram. The left anterior oblique position is a valuable aid in determining aortic dimensions. They described the points of measurements which they found to be practical and believe that the abnormally dilated aorta invariably measures over 6 cm. The differential diagnosis in cases found dilated by x-ray depends upon other clinical and x-ray findings.

Steel reviewed 40 cases of proved luetic aortitis in regard to the roentgenological diagnosis of this condition. He stated that there are cases of syphilitic aortitis which present definite x-ray changes and which are indistinguishable from other common lesions of the aorta. Luetic aortitis can be suspected when there is (1) diffuse dilatation of the aorta associated with a normal sized heart silhouette, (2) a dense high aorta present in young individuals without previous hypertension. It can be safely diagnosed when localized dilatation associated with localized increased pulsation is demonstrable.

Kurtz and Eyster presented 54 cases of acquired and 12 cases of congenital lues with reference to the fluoroscopic findings in the heart and aorta. Their data were as follows: There was fluoroscopic evidence of aortitis in 90.7% of the acquired and in 36.4% of the congenital cases; aneurysm in 18.5% of the acquired, none in the congenital cases; cardiac enlargement was found in 38.9% of acquired lues. In a group of 23% of primarily central nervous system lues 95.7% showed evidence of aortitis and 21.8% of aneurysm.

Hurxthal et al made teleoroentgenograms in 100 consecutive cases of toxic and 100 consecutive cases of nontoxic goiter. They found the number of enlarged hearts of different degrees to be practically the same in both conditions and suggested that if hyperthyroidism causes cardiac enlargement or hypertrophy and dilatation it is slight.

Voss, on the basis of a roentgen study of the size of the heart in 240 nurslings and small children aged less than 4 years, concluded the definite measurements are important and that determination by x-ray is helpful because the figures obtained by percussion are irregular.

Kissane concluded from his investigation that when children of ideal weight for height are chosen as a basis of study the mean transverse diameter of hearts in girls is smaller than that of boys at any given age and the area of body surface has the same close correlation to the size of hearts in children as in adults.

Saito et al reported a technique of injection of a fine emulsion of iodized oil into blood vessels for the purpose of visualizing the vessels in x-ray studies. They concluded that the method is valuable in the diagnosis of various circulatory conditions and that this new contrast medium has given clear and satisfactory roentgenologic plates. They report it as a safe method.

ELECTROCARDIOGRAPH

Craib made an extensive and detailed study of the distribution of potential set up by impulse-conducting tissues such as cardiac muscle, somatic muscle and nerves in the media surrounding them. He reported this in a monograph.

Oppenheimer and Oppenheimer write as follows: "The results of experimental right and left bundle branch lesions in dogs apparently cannot be applied directly to man. The histological evidence in the ten cases of intraventricular conduction defect herewith reported tends to corroborate the more recent view that in intraventricular block the common discordant type of electrocardiogram is associated with a block of the right branch."

MacLeod et al reported that in experiments still in progress they were able to obtain semi-intrinsic or intrinsicoid deflections from the ven-

tricles of dogs but not from the auricles. They found that in man intrinsicoid deflections can be obtained by placing the exploring electrode upon the pericardium. In dogs with experimentally produced right bundle branch block the intrinsicoid deflections obtained over the right ventricle are late, those over the left, early; in left block the reverse is the case. They concluded from this that their observations carried out thus far on patients with bundle branch block indicate that in what is at present called right bundle branch block the right ventricle is activated in advance of the left thereby supporting the new nomenclature of Barker, MacLeod, Alexander and Wilson.

Wilson and Herrmann measured the Q-R-S interval in 49 of the 59 cases studied by Herrmann and Wilson in which the electrocardiographic findings and the ventricular weights were compared. They concluded from their studies that the length of the Q-R-S interval increased in average value with the cube root of the ventricular weight, and that comparison of the Q-R-S interval and the thickness of the left ventricular wall shows a similar increase in the average value of the interval with an increase in muscle thickness. Q-R-S intervals which exceed 0.10 second should not be in general ascribed to the increased size of the heart or to increased thickness of the left ventricle alone but to a retardation of the intraventricular conduction.

Master studied the electrocardiographic and x-ray records of 152 patients with hypertension and found the following: The general mortality in a 3 year follow-up was 18%; 74% showed left axis deviation not necessarily coincident with left ventricular hypertrophy by x-ray; 36% show left axis deviation with inverted T I. The mortality in this group was 27%; every case of inverted T I was associated with left axis deviation; the high voltage electrocardiogram was present in 22%; the left ventricle appeared hypertrophied by x-ray in 48% and in each such case left axis deviation was present. From the above they concluded that the high voltage electrocardiogram and the roentgenogram may be the only existing evidences of a previously long-standing hypertension.

Proger and Davis in an attempt to review and study the present status of the clinical significance of axis deviation in the human electrocardiogram compared in 334 cases the electrical axis, orthodiagrams and clinical observations. They found that clinical conditions generally associated with left ventricular preponderance tend to produce left axis deviation, while those associated with right ventricular preponderance more constantly produce right axis deviation. Sixty-six of 68 normal hearts showed electrical axes varying from 9-80 degrees and they propose this as a general range of normality.

Wilson discussed the foundations of the Einthoven equilateral triangle, pointing out that it is based upon certain assumptions as Einthoven noted but which have not always been borne in mind by others. He described the laws which govern distribution of potential in solid conductors and pointed out the importance of knowledge of such laws. He stated that in semi-direct leads the electrical effects of that part of the heart wall nearest the precordial electrode are exaggerated and the excitation wave cannot be regarded as a wave of negativity since the positive pole of the potential difference is close to the negative pole, and it is this fact which makes it possible to distinguish between intrinsic and extrinsic effects in direct leads. He remarked that increase in conductivity of body tissues, particularly of those close to the heart, must decrease the electrocardiographic deflections, and suggested that in certain instances accumulation of fluid near the heart or massive edema may act in this way.

Wiggers demonstrated that concentrated potassium chloride solutions applied to the ventricular surfaces directly or injected into the pericardial sac in small quantities produced either monophasic or deformed ventricular complexes resembling those due to coronary occlusion, and cautioned therefore in the interpretation of such waves. These observations presented the first crucial proof of absorption of drugs or chemicals from the ventricular surface in mammalian hearts and are suggestive of new therapeutic possibilities. They also offer an explanation of cardiac depression in pericarditis through the absorption of toxin.

Wolff et al recorded bundle branch block with short P-R interval in healthy young people prone to paroxysmal tachycardia. Eleven cases were reported of functional bundle branch block and abnormally short P-R interval, occurring mostly in healthy young people with paroxysms of tachycardia or fibrillation. Spontaneously or by release of vagal tone, by atropine or exercise the Q-R-S duration and P-R interval became normal. Vagal influences seem largely responsible. Infection, toxic states and tachycardia and A-V nodal rhythm apparently are not responsible for this electrocardiogram. From these 11 cases the authors conclude that the aberrant Q-R-S of the type usually called bundle branch block may occur in healthy young people with normal hearts. Vagal stimulation may alter markedly the Q-R-S and may be responsible for bundle branch curves in apparently normal hearts and may shorten the P-R interval without A-V nodal rhythm and without dislocating the pacemaker. Paroxysmal tachycardia and auricular fibrillation associated with nervous control of the heart with recognition of functional bundle branch block in an important combination of intraventricular block with short P-R interval interchangeable with normal Q-R-S and P-R in healthy young people with paroxys-

mal tachycardia or fibrillation is distinctive and is not indicative of heart disease (apparently).

Hill recorded 41 cases of bundle branch block with clinical observations and concluded that the diagnosis of this condition by physical signs alone is not possible. He traced the right branch by serial sections and in one found foci of round cell infiltration in the main stem and right branch, which were considered to be possibly specific in origin, as the case was a known luetic.

Slater reported a case of three to one and four to one partial bundle branch block of type II and believed this to be the first recorded.

Bach studied the clinical significance of right bundle branch block in 80 cases and concluded that in the first or cardiovascular degenerative group which composes most of the cases the prognosis is reasonably good; in the syphilitic group the prognosis is bad; in the rheumatic group, which is composed essentially of younger persons, the prognosis is good.

Hyman reported a case of complete dissociation of auricle and ventricle in a man 57 years of age who has had no symptoms referable to the cardiovascular system. The author believes that the block dates back at least 45 years, if not longer, and probably originated from one of the infections of the patient's childhood.

Shearer reported one case of lobar pneumonia in which the electrocardiogram showed a plateau or high take-off of T wave without clinical evidence of coronary disease.

Shapiro studied the electrocardiograms of 119 children who had a history of rheumatic disease but who were able to attend school regularly; for comparison he studied 50 normal controls. He found that many electrocardiograms of the so-called quiescent type were similar to those in acute rheumatic fever but the changes were found less frequently. He considered the most common and persistent electrocardiogram finding in the group of 119 quiescent patients to be lack of iso-electric period between the R or S and T, and marked variability of the R-T or S-T interval from time to time.

Scott et al reported electrocardiograms from a case of hemopericardium and one of purulent pericarditis in which the R-T deviations were similar to those of recent myocardial infarction, and hence suggest discarding the term "coronary T wave". The same authors studied the effect of acute experimental effusion on the electrocardiogram of normal dogs to ascertain if similar changes would occur as noted by them in their clinical cases. They found three general types of abnormal ventricular complexes which differed in regard to the change in the S-T segment and the T waves, but in all of the types the Q-R-S complexes were of smaller voltage than normal. They suggested the hypothesis that in experimental effusion, as in the cases mentioned above, the electrocardiograms are caused by anoxemia of the heart muscle, which is more marked in certain regions of the left ventricle, leading to intraventricular block and diminished electrical response in the involved regions.

Scherf noted that in cases of pericardial effusion the electrocardiogram showed the P and T deflections to be low or absent and the main deflection to be smaller, and if the pressure of the effusion is great there may be a negative T wave and a curved negative S-T interval. He confirmed his clinical finding experimentally in dogs.

Pardee called attention to certain electrocardiographic findings showing left axis deviation or normal electrical axis combined with a large Q wave in lead three, one that is 25% or more of the largest deflection of Q-R-S in whichever lead this may occur. He found that the majority of such records were obtained from patients with the anginal syndrome, but some were obtained from cases of myocardial fibrosis and congestive failure, some with rheumatic carditis and a few with hypertension. He found this large Q III twice in 277 normal cases.

Nathanson analyzed the electrocardiograms of 60 cases of coronary sclerosis and found T wave inversion to be the most common abnormality, occurring in 88% of the cases. He discussed certain less frequent findings.

Gilchrist and Ritchie, from their study of 148 cases by means of serial electrocardiograms, concluded that sequential alterations of the R-T segment and of T I, occurring in the course of a short period of time, are strong presumptive evidence of myocardial infarction; similar changes occurring more slowly usually indicate a more chronic process.

Hermann and King studied 24 cases of heart disease in pregnant women and discussed the importance of repeated electrocardiographic studies, and the significance of the findings recorded. They believe that of general anesthetics, ethylene is the choice from the cardiac point of view, but that local anesthesia is the safest to use.

Blumgart and Gargill presented electrocardiographic tracings of two patients showing a rare form of bigeminy. Although a similar form of coupled rhythm occurring in almost complete A-V dissociation has been observed rarely, no instances occurring in transitions from complete A-V dissociation to S-A rhythm have previously been reported. The period of A-V dissociation was terminated by A and V sequence when the auricular impulse descended to the ventricle after an interval of at least 0.46 second in case one and of at least 0.68 second in case two. Although reversed conduction from ventricle to auricle was at all times absent, the premature ventricular beat was invariably followed by quickening of the auricular rhythm,

the S-A node gaining control of the heart for several beats. With subsequent slowing of auricular rate, complete A-V dissociation again occurred and the cycle of events was repeated. The abnormal mechanism occurred after moderate digitalis in one case, in the other case no digitalis. They discussed the relationship of the mechanism to the theory of parasystole.

Andrus and Carter have reported their finding that in the dog's heart "During vagal stimulation a single induction shock introduced soon after the end of the refractory period frequently produces auricular fibrillation." The authors write as follows: "The development of this irregularity in our series of experiments following a stimulus applied well out on the auricular appendix is of particular interest. The fact that there is no measurable gap between the stimulus and the beginning of the reëntrant rhythm indicates, we believe, that it rises at that point and not in a ring of muscle at the base of the auricle. The fact that in the normal heart under conditions of increased vagal tone an extrasystole occurring early in diastole may set up a reëntrant rhythm is a possible explanation, in some instances at least, for the genesis of auricular fibrillation."

Blumgart and Gargill discussed the clinical and electrocardiographic aspects of four cases of reciprocal beating of the heart and remarked on the nature of the abnormal mechanism. From their studies in one of the cases from the pharmacological and physiological viewpoints, they believe that the reciprocal beating was influenced mainly by vagal hypertonicity.

OTHER METHODS OF EXAMINATION

Hochrein called attention to the fact that adhesive pericarditis is only rarely recognized as such. He described the pneumotachograph, an apparatus which registers the velocity of respiration, with the aid of which he was able to detect a peculiar respiratory curve in patients who showed the clinical aspects of adhesive pericarditis and in whom later the necropsy verified the diagnosis. In other patients who showed no clinical evidence of adhesive pericarditis he made the diagnosis because of the recorded curve and in some of the cases which came to necropsy adhesive pericarditis was found. He believes this instrument to be a valuable aid in diagnosis.

PHARMACOLOGY

Brow et al investigated the irregularities of the heart beat under chloroform anesthesia and their dependence on the sympathetic nervous system. They write "Extrasystoles can be found during anesthesia with ether and diallylbarbituric acid but not so readily as under chloroform. We have used the extrasystole as an indicator for the intactness of the sympathetic nervous system, and with this we have succeeded in showing fibrous tracts passing from the hypothalamus down the full length of the spinal cord and corresponding to tracts formerly recognized as sympathetic pathways after section of the hypothalamus at the level cited."

Bötzel reported 2 cases of the lenta form of meningococcus with recovery after the intravenous injection of acriflavine hydrochloride. After considering his own and other authors' cases he concluded that, although the injection of acriflavine hydrochloride is effective in cases in which the infection takes a slow course, it usually fails in acute cases.

Levine et al, because of their investigations, suggested that the production of anginal pain by the injection of epinephrine may serve as a diagnostic test for angina pectoris. This test should be used, if at all, with a great degree of caution.

Brams and Strauss studied 21 patients divided among normals, arteriosclerotics and hypertensives, and found that after administration of amyl nitrite the transverse diameter of the heart was reduced in 18 cases; the width of the aortic shadow was increased in thirteen and the results seemed independent of the cardiovascular pathology.

Mas de Ayala after considering his experience in the treatment of 230 patients suffering from mental and neurological diseases with the inoculation of Treponema hispanicum decided to use this treatment in chorea. He provoked experimental relapsing fever by the inoculation with Treponema hispanicum in a child aged 12 years, who had had intractable chorea even after all usual treatments for two years. Four attacks of fever occurred and after the fourth febrile attack permanent recovery took place.

Pilcher and Gerstenberger recommended the treatment of chorea with phenyl-ethyl-hydantoin (in doses 1½ to 2½ grains three times per day) and reported that a febrile reaction takes place six to nine days later and a few days later a generalized morbilliform exanthem appears. After the subsidence of these phenomena there seemed to be definite improvement in the patient's condition, especially in the more severe cases.

Youmans and Trimble concluded from studies concerning the effect of ergotamine on the heart rate of trained unanesthetized dogs, that in human subjects the effects of ergotamine on the heart rate are due principally to an action on the vagus mechanism similar to that in normal intact dogs.

Harrison et al, from the basis of their observation and experimentation, suggested that a loss of potassium from the heart muscle seems to take place in edema, and the consequent deficiency of power may play an important part in cardiac fatigue. Thus a vicious circle is set up

with increasing fatigue and increasing decompensation. They tried to remedy the condition by the giving of potassium salts but are not convinced as yet of the final outcome of such treatment.

Thorpe investigated the possibility of isolating histamine from the heart and writes "Extract of ox ventricles shows a powerful depressor activity corresponding to 8-18 mg. of histamine per kg. assayed biologically. Pure histamine, in the form of its dipicrate, has been isolated from such an extract and it is suggested that this substance is responsible for depressor activity. The significance of these findings in relation to recent work on the so-called heart hormone is described."

Hartung reported a patient who previously apparently had an essentially normal cardiovascular condition, who was poisoned by aconite contained in illegal liquor. The patient suffered acute collapse, showing bradycardia and heart block. He recovered his normal good health.

Wiggers investigated the absorption of drugs from the right ventricular cavity and demonstrated their absorption and transportation to the left ventricle. He discussed the importance of the thebesian veins in such rôles in certain cases. He believes that intracardiac injection of drugs is justifiable under the proper circumstances.

Wyckoff et al discussed the importance of differences in potency of digitalis in clinical practice. They presented evidence which showed that body weight is a factor in digitalis dosage and that it is essential to take into account differences in potency of digitalis as determined by bio-assay. They found digitalis from one well-known manufacturer to be improperly labeled and that it was about twice as potent as it was supposed to be. They discussed the confusion which arises from use of the term "standardized digitalis" without a statement of the exact potency, because the "standards" differ according to the manufacturer.

Gold et al presented a study of 77 experiments carried out on six widely different members of the digitalis group to find out if there was any qualitative difference in their cardiac action and found that there was no such difference but there were extreme variations in individual responses to the same preparation, which fact may account for some of the misstatements and misunderstandings of the past.

Schwartz and Schwedel investigated the effects of digitalis on the sinus rate of children with rheumatic fever and chronic valvular heart disease associated with congestive failure by giving them daily doses of 3 c.c. of tincture of digitalis until the appearance of nausea and vomiting. They found a progressive slowing of the sinus rate averaging about 28 beats per minute in the patients who were kept in bed. In the ambulatory patients there was no slowing so long as they were active, but if they were made to rest for a few minutes a noticeable slowing occurred.

Wyckoff et al, from their studies of the therapeutic value of digitalis in pneumonia, concluded that there is no evidence that routine digitalis therapy in lobar pneumonia lowered the mortality and that such a practice is dangerous. They pointed out that digitalis may be life-saving in an occasional patient with auricular flutter or auricular fibrillation but that flutter and fibrillation occur in less than 5% of all cases.

Weiss and Ellis made circulatory measurements in patients with rheumatic heart disease before and after the administration of digitalis. They concluded from the evidence they secured and from previous observations in the literature that the conception that the rate of blood flow is increased in circulatory failure due to rheumatic heart disease and that the beneficial effect of digitalis is manifested by its capacity to reduce the cardiac output was not supported.

Ross et al investigated the coronary flow and peripheral output of the heart simultaneously, before and after the administration of pituitary extract. Their results indicated that coronary spasm is at least one of the important factors that may cause a fall in blood pressure under certain circumstances when pituitary extract is administered.

Parsonnet and Hyman, from their experience in 8 cases of auricular and ventricular dissociation with Adams-Stokes syndrome, concluded that barium chloride has no effect, either good or bad, on the frequency or severity of the seizures.

Keith et al made studies which showed that the nitrates are efficient diuretics, the response being accompanied by certain specific metabolic changes which involve the salts, the acid base equilibrium, water balance and the nitrogen balance.

TREATMENT

Drugs

Stewart used theocalcin (1 to 5 gm. three times a day) in the treatment of 16 patients with congestive failure and found that a marked diuresis was produced in the majority of cases. He thought it more effective and less toxic than theophylline and theobromine sodiosalicylate.

Zemetz and Mikheleva investigated rectal administration of cardiac drugs in 15 cases of decompensated heart disease; (pronounced decompensation in 12 cases; slight in 3 cases; some cases having mitral valve defects and others having none). He thought that there was evidence that patients with a considerable stasis

in the portal vein benefited more from diuretic remedies when they were introduced by rectum.

Wilson and Wishart found that in two cases of paroxysmal tachycardia of supraventricular origin, the intravenous administration of digitalis produced a pronounced slowing of the heart rate followed by the return of the normal sinus rhythm.

Gold and DeGraff conducted studies on digitalis requirements in ambulatory cardiac patients. They write, "In the average ambulatory cardiac patient with auricular fibrillation and moderate heart failure a much lower 'effective concentration' of digitalis in the body suffices to produce full therapeutic effects than is required in the average bedridden patient in advanced congestive failure." It is the accepted practice to use relatively larger doses of digitalis to produce the full therapeutic effects and then relatively smaller daily ones in order to maintain these results for long. Evidence has been set forth proving, however, that the effective concentration of the drug within the body necessary to maintain the full effect is usually much lower than that required to produce them in the beginning.

Schwartzman made a preliminary report of the treatment by injection of muscle extract in one case of angina pectoris and three cases of intermittent claudication; all the cases improved. He assumed that some sort of antispasm substance is at work during contraction of active skeletal muscle and that such a substance obtained from skeletal muscle of healthy young animals might counteract the spasm of angina and that deficiency of the substance might be an important factor in the production of the anginal syndrome.

Allen, reporting on the recent advances in the treatment of circulatory disturbances of the extremities, reviewed the methods and results of treatment at the Massachusetts General Hospital.

Logefeil reported that a survey of experience and results in 500 cases with over 5000 injections pointed to the desirability and increasing acceptance of the medical or injection method of treating varicose veins. He found it cheaper, less painful and more permanent than surgery.

Swift et al worked on the hypothesis that one of the elements in the pathogenesis of rheumatic fever is a state of hypersensitiveness of the tissue to streptococci and hence if this condition could be changed to hyposensitiveness improvement might be expected. Reasoning from their experimental data on rabbits which showed that local injections produced hypersensitiveness and intravenous injections of streptococci produced hyposensitiveness, they tried intravenous injection of streptococci in rheumatic patients. They found that in a number of cases showing little tendency to recover under ordinary therapy, initiation of intravenous vaccination marked the time of beginning improvement. They used very small doses to prevent non-specific shock, and warn against non-cautious use in carditis cases.

Swift and Wilson also studied the influence of intravenous vaccination with streptococci on the prevention of relapses in children with rheumatic fever. They used 66 untreated cases as a control. They vaccinated intravenously 60 other cases at various periods of the fall and winter of 1928-1929 and again during the fall and winter of 1929-1930. During the usual season for rheumatic relapses in 1929 the vaccinated group showed approximately one-half the tendency to relapse that they had shown in previous years and that the control group showed that season. They feel that longer observation periods must elapse before final conclusions can be drawn.

Moore and Stewart reported one case of disappearance of intraventricular block occurring in a case of uremia following intravenous injections of hypertonic glucose. The patient died some time later.

Wile, in considering the principles underlying treatment of cardiovascular syphilis, stated that treatment should always be the treatment of the individual patient. Fully compensated cases with good background of early treatment frequently need not and should not be treated. Except for tryparsamide in certain selected cases of aortitis, better results are obtained by conservative mercury, bismuth and iodide than by arsphenamine.

Palmer reviewed the recent literature on the treatment of essential hypertension and gave the minimum criteria for the clinical evaluation of hypotensive action and then discussed the general principle of the management of essential hypertension.

Weiss and Ellis from their study of patients with arterial hypertension as regards proper management and its effect on the prognosis as to health and longevity concluded as follows: "In a small proportion of cases the blood pressure will return to normal and the symptoms will disappear either permanently or for a prolonged period of time. In a second group there will be some lowering of the blood pressure, although not to a normal level, with accompanying subjective improvement and some checking of the progress of the disease. A third and large group will show no material lowering of blood pressure but their symptoms will be lessened and they will be enabled to live more comfortable lives. The remainder, in particular many of the cases of malignant hypertension will progress inexorably, apparently uninfluenced by therapy, to a fatal termination."

Stieglitz considered that arterial hypertension is brought about by a vicious circle of vascular fatigue, arteriolar hyperirritability and

spasticity which may be broken down by persistent, prolonged, and mild vascular sedation. He obtained from his study of 200 unselected cases of hypertensive arterial disease and 120 cases of hypertension in pregnancy, very gratifying therapeutic results from the use of bismuth subnitrate as a mild vascular sedative.

Saluby, from his investigations on the effects of potassium thiocyanate on elevated blood pressure in a series of unselected individuals with chronic hypertension, concluded that thiocyanate appears to be a drug of some value in the treatment of essential hypertension and in mild nephritis with only moderately reduced renal function.

Fineburg concluded from his studies of hypertensive patients that the subjective improvement was greater when the sedatives were used, while the lowering of pressure was more marked with the use of potassium thiocyanate.

Borg treated a group of 24 hypertensive patients with sodium or potassium thiocyanate, using from 2-10 grain three times daily for from 1-4 weeks and found that 22 showed drops in systolic pressure varying from 15-150 mm. mercury, the majority obtaining substantial reductions. Nine patients showed no average diastolic reduction, 13 developed unpleasant toxic symptoms, and 4 patients developed toxic psychoses.

Ayman, concerning the evaluation of therapeutic results in essential hypertension writes, "In a series of 40 unselected hypertensive patients, seriously and enthusiastically treated by the daily administration of a few drops of diluted hydrochloric acid, the symptoms were definitely improved in 33, or 82%. The symptoms associated with uncomplicated hypertension may frequently be relieved by the suggestion inherent in any seriously and enthusiastically prescribed drug or method of therapy. This is probably the explanation of many successes reported in the past."

Niles and Wyckoff, after two years' observation in hundreds of cases of lobar pneumonia in which digitalis was administered routinely, concluded that the results obtained did not justify the continuation of routine digitalis therapy in this type of cases.

Levy and Barach believe that anoxemia may play a crucial rôle in determining the outcome after coronary thrombosis, consequently they concluded that the "employment of oxygen therapy (preferably in a concentration of from 45 to 50%) may aid in maintaining an adequate circulation until the heart has had an opportunity to recover from its acute functional disturbance. They remark that in some instances, of course, recovery is impossible but point out that on the other hand, as in the cases they reported, the use of oxygen may be a life-saving measure.

Hewer reported a case of auricular fibrillation that was digitalized and developed typical Stokes-Adams syndrome. After the digitalis had been discontinued for some time the auricular fibrillation recurred but there were no recurrences of the Stokes-Adams syndrome, the patient dying on the 23rd day with the development of extreme dyspnea and cyanosis.

Brown in a discussion of the management of coronary thrombosis and its complications stated that during the acute attack pain and shock are the two main features. For the former he recommended very large doses of morphia, the initial dose being as much as one-half grain at times. He believed that glyceryl trinitrate may be tried if the systolic blood pressure is not below 100 mm. of mercury and in a few cases light ether anesthesia may be justified. Shock is treated as in other cases except that stimulants are to be avoided if the systolic blood pressure is 100 mm. of mercury or over. Intravenous fluids should in general be avoided. Rest is of prime importance, being absolute for several days with bedrest for at least one month.

Bland and White investigated the use of mechanical measures in the treatment of obstinate edema. They write "In 8 cases of extensive edema, mostly the result of congestive heart failure and resistant to medical therapeutic measures we have employed Southey's tubes inserted into the edematous subcutaneous tissues of the legs or scrotum. In two of our patients the results were strikingly beneficial, following the removal of 16 liters in the course of two days in one case and of 9 liters in three and one-half days in another. In 3 patients there was moderate relief; in 1 case only slight improvement was noted. The remaining 2 patients were not relieved. In suitable cases the use of Southey's tubes is a valuable therapeutic procedure and we believe that the employment of this method as recommended many years ago by Reginald Southey should be revived."

X-ray

Sussman made a preliminary report on the treatment of 16 cases of angina pectoris by paravertebral short wave radiation over the region of the stellate ganglion. These results were: 6 almost completely relieved, 5 moderately improved, 1 dead, 4 not yet returned for observation.

Surgery

Robey and Finland made a preliminary report on the effect of tonsillectomy on the acute attack of rheumatic fever. From a study of 165 cases, 71 operated on during acute polyarthritis, and 94 controls, the authors believe that in acute rheumatic fever thorough study should immediately be made for foci of infection and if found they should be removed. They concluded that

tonsillectomy may be performed during acute active rheumatic fever without harm to the patient from operation and they unhesitatingly approve of such measures in well-chosen cases.

Kaiser analyzed the results of tonsillectomy in 2200 children and compared them with an equal number of controls. He writes as follows: "The real value of the removal of tonsils and adenoids cannot be definitely established in a few years. Apparent benefits during the first few postoperative years are not so evident over a ten-year period. Outstanding benefits are apparent in influencing the incidence of sore throats in a ten-year period. Substantial benefits are apparent in rendering children less susceptible to scarlet fever and diphtheria. Cervical adenitis is decidedly reduced. The respiratory infections, such as laryngitis, bronchitis, and pneumonia, not only are not benefited but actually occur more frequently in tonsillectomized children. First attacks of rheumatic manifestations occur from 30 to 50 per cent. less often in tonsillectomized children. The greatest reduction occurs in children tonsillectomized early. Recurrent attacks are not benefited at all. Incomplete tonsillectomies do not offer the same protection against the usual throat complaints and infections as complete removal of tonsils."

Porter and Porter reported a case of paroxysmal hypertension cured by removal of a tumor of the adrenal. The case was diagnosed preoperatively and is the second such case.

Stern reported 3 cases of thromboangiitis obliterans in which blocking of the right twelfth thoracic and first and second lumbar nerve roots with alcohol definitely increased the circulation of the right lower extremity.

White has summarized the present state of our knowledge regarding the cardiac sensory nerves and his own experience with paravertebral alcohol injection as follows: "(1) Pain from the heart and ascending arch of the aorta is conveyed to the sympathetic trunk by postganglionic, unmyelinated fibers running in: a. The superior, middle and inferior cardiac nerves to the corresponding cervical sympathetic ganglia. b. Recently discovered nerves which run directly across the mediastinum from the posterior cardiac plexus to the upper dorsal sympathetic ganglia. The painful stimuli are then carried to the spinal cord over preganglionic, myelinated fibers in the upper dorsal white communicant rami. As there are no white rami in the cervical region, all pain sensation referred over the cervical sympathetic trunk must descend to the upper dorsal region before it can reach the spinal cord. Pain referred to the left, or right, precordium and arm, enters the cord only on the same side. The vagus nerve carries no important sensory fibers.

"(2) Operation on the cervical sympathetic trunk even if it includes the stellate ganglion, cannot interrupt all the pathways of cardiac pain.

"(3) The upper dorsal communicant rami or their sympathetic ganglia are the logical points at which to interrupt painful stimuli from the heart.

"(4) These anatomical and physiological premises were put to the test in 21 cases. In each instance where we have been sure of a successful block of the sympathetic rami in the segments of the referred pain, angina pectoris has disappeared.

"(5) Alcohol injection is difficult technically, because of the depth of the rami and the small area sclerosed by the alcohol. However, it is the safest method we have and its results are distinctly better than in cervical sympathectomy. Forty-seven and four-tenths per cent. of cases have been over 90 per cent. improved, a further 26.3 per cent. over 50 per cent. relieved and only 15.8 per cent. have been total failures.

"(6) A patient with aneurysm of the ascending arch of his aorta was totally relieved of pain referred over the entire cervical and upper dorsal region on the right side by alcohol block of his first and second dorsal rami.

"(7) In exceptional patients who are unusually favorable operative risks, we are beginning to remove the upper dorsal sympathetic ganglia, to avoid the 26.3 per cent. chance of a poor result following an unsuccessful injection of alcohol."

The same author discussed the desirability of diagnostic blocking of the sympathetic nerves to extremities in evaluating the benefit of sympathetic ganglionectomy. He concluded that blocking of the sympathetic nerves with procaine is a useful diagnostic procedure to determine (a) the quantitative increase in surface temperature that can be produced by operation on sympathetic ganglia and (b) the effect of sympathetic ganglionectomy on obscure pain which is suspected of being referred over the sympathetic nervous system. Diagnostic nerve blocking causes little more discomfort to the patient than foreign protein shock and is a quantitative rather than a qualitative test. The procedure is reasonably safe and simple.

Brown investigated from a quantitative aspect the changes which occurred in the surface capillaries of man following cervicothoracic sympathetic ganglionectomy. He made the above-mentioned observations before and after operation in nine cases of advanced Raynaud's disease, four cases of vasomotor forms of scleroderma, four cases of primary scleroderma and two cases of thromboangiitis obliterans and one case of arthritis of the hands. He found that the operation did not cause dilatation of the

capillaries in any of the cases, but there was arteriolar dilatation. He concluded that the major effect of the operation is exerted on the arterioles, that there is a sharp and maintained increase in surface temperature of the hand in every case, and that chemical control of capillaries of the skin of human beings seems under certain conditions more effective than nervous control.

Adson and Brown concluded from their clinical experience that sympathetic ganglionectomy and trunk resection is a surgical operation of considerable magnitude which we are justified in using in treatment of advanced cases of Raynaud's disease, in early developing vasospastic cases of scleroderma, and in cases of thromboangiitis obliterans in which vasospasm of collateral arteries exist. It is probably indicated in borderline cases, but should be used with caution.

White and Churchill reported a case in which there was striking improvement following a pericardial resection in a young girl suffering from serious chronic constrictive pericarditis (concretio cordis). Her life was changed from that of a bedridden cripple to normal healthy activity and the authors suggested the possibility of improvement in similar serious cases. A few other successful operations of this nature have been reported, mostly in the German literature.

Nyström reported the technique of the Trendelenburg operation for pulmonary embolism and the results obtained in his own cases and in cases recorded in the literature. He collected 13 cases in which the patients survived the operations. Ten cases were done at the Upsala clinic; 8 of these were done by Nyström and 2 of this group were discharged healed and were alive at the date of the article.

Lerman et al reported 6 cases of arterial embolism of the extremities on which embolectomies were done. In 4 of these cases cardiovascular disease was the underlying cause of the embolus, in one, aneurysm of the subclavian artery and in one case the cause was not definitely established. The results were as follows: 2 cases had good results so far as circulation of the affected extremity was concerned; however, one of these died 13 weeks after the operation because of myocardial failure and the other 3 operated on died 1-3 days after operation in spite of postoperative improvement of the circulation of the extremity involved.

Butler et al studied 414 patients with heart disease of various types who underwent 494 operations, and found 28 unexpected deaths or a mortality of 6.3%. They concluded that the survival of the patients with heart disease is not the only consideration and that conditions for which there are non-operative palliative methods of treatment should not be subjected to surgery when the heart disease is so grave that ultimate life expectancy is short. They stated that in most types of heart disease the surgical risk is not appreciably greater than in normal persons and that when the risk is great it may be materially diminished with proper preoperative diagnosis and therapy.

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THE KOCH ANNIVERSARY

The fiftieth anniversary of Robert Koch's announcement of his discovery of the tubercle bacillus falls on March 24. This date, coming only seven days before the opening of the Early Diagnosis Campaign, provides a remarkable introduction for it. Tuberculosis associations will have through this an opportunity to focus the attention of the public on Koch's research as the foundation of all tuberculosis work. Koch in his paper proved that every case of tuberculosis is caused by the tubercle bacillus and that "every case comes from another," the slogan of the 1932 campaign. The National Association is planning to commemorate the anniversary on a national scale through newspapers, news reels, and broadcasting, and will provide special material and suggestions to assist local associations in working up a program. These suggestions will be included in the regular Early Diagnosis Campaign publicity kit to be sent out about March 1.—*Bulletin National Tuberculosis Association.*

CASE RECORDS
of the
MASSACHUSETTS GENERAL HOSPITAL

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICAL-PATHOLOGIC EXERCISES

EDITED BY RICHARD C. CABOT, M.D.
F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 18071

CARDIAC DECOMPENSATION; CAUSE?

MEDICAL DEPARTMENT

First admission. An American Negro forty-three years old, a utility man in an office building, entered December 8, sixteen months before his final admission, complaining of dyspnea and palpitation of five months' duration.

Two years and a half before admission while walking up a slight incline he had sudden dyspnea and palpitation. He felt faint and weak. He went home and went to bed for a day or two. He had no further trouble until five months before admission, when he marched in a parade on a hot day. He became suddenly very faint, with dyspnea, palpitation, and, as before, a sense of "something too big in his chest". He continued to march, although the crowds became a blur. After five or ten minutes he felt better and soon recovered from the attack. During the next ten days he had three or four attacks of dyspnea with palpitation on exertion, relieved by rest. He began to urinate once or twice at night. Four months before admission he had onset of orthopnea requiring two pillows. He often awoke with shortness of breath. He had occasional cough with a little mucopurulent sputum. During the next three months he rested a good deal, avoided strain, and slowly improved until two months before admission he felt almost well in spite of much orthopnea at night and increase of nocturia to two or three times a night. One month before admission he caught a slight cold, with cough and much sticky sputum. His legs and ankles were now swollen after a day on his feet. The edema, dyspnea, orthopnea, nocturia and weakness gradually increased. A week before admission he became definitely worse, could barely go up five steps at a time, and began to notice substernal tenderness and ache.

The only history of familial disease was insanity in a sister. Eight months before admission he was divorced from his wife. He used considerable alcohol. His work required long walks, stair climbing and occasionally some lifting.

He had had the diseases of childhood and diphtheria. He had frequent sore throats until twenty years before admission, when his tonsils were removed. He had frequent nosebleeds as a child. Fifteen years before admission he had gonorrhea with local treatment. In 1918 his right arm was wounded in battle and he was slightly gassed. The following year he had a rash over the body. In general he had always been fairly well and strong. He had no history of chancre and denied having had syphilis. He was very unstable emotionally.

Clinical examination showed a slightly obese middle-aged colored man with moderate dyspnea and orthopnea. There was slight engorgement of the veins of the neck. The heart showed marked general enlargement. The apex impulse was seen and felt in the fifth interspace. The left border of dullness was 12 centimeters to the left of midsternum, 3 centimeters outside the midclavicular line. The right border of dullness was 4 centimeters to the right, the supracardiac dullness 8. There was a harsh, poorly distinguished systolic murmur over the precordium best heard over the apex in the sitting position. The rate was very rapid, with gallop rhythm, but no true pulsus alternans could be made out. (On examination in the Outpatient Department the day of admission to the ward pulsus alternans was noted.) An electrocardiogram showed sino-auricular tachycardia, rate 110, inverted T_1 and T_2, left axis deviation. The lungs showed slight dullness at both bases with moist râles. The liver was 5 to 6 fingerbreadths below the costal margin. The edge was felt, smooth and not tender. The shin bones showed saber bowing. There was no edema. The pupils and reflexes were normal.

The amount of urine is not recorded. The specific gravity was 1.020 to 1.024. There was the slightest possible trace of albumin at two of four examinations. All four sediment examinations showed white blood cells. One showed occasional granular casts. The renal function was 45 to 50 per cent. Blood examination showed 7,100 to 11,200 white cells, 66 per cent polynuclears, hemoglobin 90 to 95 per cent, 6,250,000 to 5,500,000 reds, platelets slightly increased, smear otherwise normal. A Hinton test was negative. The non-protein nitrogen was 45 to 24 milligrams.

The temperature was not remarkable except for the rise noted below. The pulse was 74 to 114. The respirations were normal.

X-ray examination showed diffuse gross enlargement of the heart shadow. All the chambers appeared enlarged. The supracardiac dullness was increased in the anteroposterior view. The aorta was not definitely dilated in the oblique view. The lung fields were less radiant than normal, particularly at the bases. There was no evidence of an appreciable amount of fluid. There were calcified glands in the right side of the neck. The sinuses were not definitely

abnormal. There were marginal pockets about all the teeth. Some teeth showed apical absorption.

The day after admission the patient had definite pulsus alternans. He did well with digitalis and rest. On December 14 the urinary output from 8 p. m. to 8 a. m. was 1300 cubic centimeters. A two hour test showed the specific gravity 1.020 to 1.024. On December 19 a repetition of the test showed the gravity 1.023 to 1.030. December 19 he developed an acute follicular tonsillitis with rise of temperature to 102°. This cleared up in a few days. The pulse continued to alternate however and the patient had an attack of epigastric distress. On further rest in bed he became symptom free. He was discharged January 10.

History of interval. The patient remained at home for the next six weeks. The day after his discharge he noticed a swelling behind his left sternomastoid. This increased, seemed rather diffuse and was tender. On January 16 he came to the Outpatient Department, where examination showed a deep diffuse lump under the left sternomastoid the size of an apricot, also a very large inflamed left tonsil. He was given directions for poulticing, which he followed. The process partially subsided until it became a plateau, showing no tendency either to disappear or to spread. The tenderness had pretty well disappeared. Examination in the Tumor Clinic on February 2 and 5 showed nothing wrong with the nose or throat. Two weeks later he spent four days in the Eye and Ear Infirmary. A diagnosis of cervical abscess was made and he was transferred to the Massachusetts General Hospital. He had continued to take three grains of digitalis daily until he entered the Eye and Ear Infirmary. At that time he stopped it.

Second admission, February 24, six weeks after his previous discharge. On examination he was perspiring profusely. He breathed in gasps when talking. Below the left ear was a fairly firmly fixed mass, firm about the edges but giving a feeling of fluctuation in the center. Below it were a few small shotty glands. The lungs showed a few fine moist râles at the bases. The heart was enlarged to percussion. The left border of dullness was 13 centimeters to the left of midsternum, 4 centimeters outside the midclavicular line. The right border of dullness was 4 centimeters to the right. The supracardiac dullness was not made out. There was pulsus alternans, rate 120 to 140. The sounds were of good quality. The blood pressure was 160/120. The liver edge was felt almost at the level of the umbilicus.

A Hinton test was negative. No other laboratory data are recorded.

The temperature was 96° to 99.2°, the pulse 60 to 125. The respirations were 20 to 32.

X-ray examination showed enormous enlargement of the heart, as was previously described. There was no evidence of tuberculous infection in the lungs. The apical pleura on both sides was slightly thickened.

The day after admission a horizontal incision was made over the mass and carried down through four inches of porky indurated tissue. About an ounce of thick pus was evacuated. On March 6 the patient was discharged.

History of interval. Soon after leaving the hospital he began to have attacks of aching in the left flank, generally on walking or standing. A week after his discharge he reported at the Outpatient Department that ever since his operation he had been more dyspneic, increasingly weak and unable to sleep well. He had occasional epigastric bloating and edema of the ankles. The apex impulse of the heart was found to be in the midaxillary line. The blood pressure was 138/110. He began to have severe aching and bulging in the "liver region", particularly after eating a large meal. On March 26 he reported at the surgical Outpatient Department, where some firmness in the right upper quadrant was found. For a week before his third admission his heart had palpitated with or without exertion. For four nights before readmission he had been unable to sleep, his ankles had been permanently swollen and his dyspnea had suddenly become worse. On April 10 he vomited orange colored material. On April 12 the dyspnea, palpitation and edema became so severe that he came to the Emergency Ward. The aching in the left flank had grown worse.

Third admission, April 12, a month after his previous discharge.

On examination he showed signs of much recent loss of weight. He was moderately dyspneic while sitting up in bed. The sclerae were muddy, possibly yellowish. The chest wall showed bulging over the precordium. The heart was greatly enlarged to the left, with a heaving diffuse impulse without thrill or shock. The action was rapid, the rhythm regular, the sounds of poor quality, distant, with gallop rhythm. The apex impulse of the heart was seen and felt in the anterior axillary line. The right border of dullness was 6 centimeters to the right. The supracardiac dullness was not made out. The pulmonic second sound was accentuated. The pulses were equal and synchronous, with increased volume and definite alternation. The blood pressure was 260/100. The radials and temporals were palpable and tortuous. An electrocardiogram showed sino-auricular tachycardia, rate 120, diphasic T waves in all leads, left axis deviation. The lungs showed râles at both bases posteriorly. There was marked edema below the midtrunk. There was flatness (liver?) below

the right costal margin to below the level of the umbilicus. The liver edge was not felt.

The amount of urine was 30 to 80 ounces, the specific gravity 1.030 to 1.014. There was a slight trace to the slightest possible trace of albumin at two of five examinations, sugar once, rare to occasional white blood cells at four examinations. Blood examination showed 13,400 to 6,050 white cells, 71 per cent polynuclears, hemoglobin 85 per cent, reds 5,820,000, smear normal except for two basket cells. A third Hinton test was negative. The non-protein nitrogen was 35 to 52 milligrams. The renal function was 40 to 20 per cent. The first of three stool examinations showed a strongly positive guaiac.

The temperature was 94.6° to 101.3°, the pulse 60 to 132. The respirations were 20 to 32.

Two days after admission the patient was much improved and the edema was disappearing. He had attacks of dyspnea on two successive evenings however. There was no jaundice. The morning of April 19 his feet were edematous. By April 24 he was having paroxysmal dyspnea night and day and vomiting frequently regardless of the dosage of digitalis. He had comfortable nights with the aid of morphia. He was on the whole very comfortable except for the attacks of dyspnea. He developed pitting edema of the ankles.

On May 16 he suddenly sat up in bed and complained of pain and a sense of pressure in his chest. This was quickly relieved by a quarter of a grain of morphia. His blood pressure taken a few minutes later was 100/50 and his pulse was poor. He was given 15 millimeters of adrenalin subcutaneously. Within twenty-five minutes after the onset of the attack he died.

Clinical Discussion

BY MAURICE FREMONT-SMITH, M.D., AND GEORGE W. HOLMES, M.D.

Dr. Fremont-Smith: That is a story of rather rapid onset of cardiac failure in a forty-three year old Negro. The question is as to the cause. He had had diphtheria. On the whole we believe that the lesions of diphtheria heal completely if they heal at all. This patient is rather old for the onset of rheumatic heart symptoms and gives no history of rheumatism, although possibly the history of sore throats might be considered sufficient. The heart murmurs are not characteristic. Hypertensive heart disease is probably most likely. We do not know yet what the blood pressure is. I should imagine that even if the blood pressure were now low he might have had a high blood pressure, previously, reduced now because of a failing heart. He is young for cardiosclerosis. He may have had syphilitic injury of the heart or the aorta; he is in the right age group; but one would expect more definite evidence of either aortitis in the shape of pain early, which he did not have, or aortic regurgitation.

He apparently had a very good renal function. One would expect the renal function to be down just from heart failure alone.

There is good evidence against chronic nephritis, because chronic nephritis would have given an anemia by this time.

Dr. Holmes: There is an enormously enlarged heart. Its shape suggests that the primary lesion is on the left side, with left ventricular enlargement. Left ventricular enlargement with later dilatation of the auricle would be consistent with hypertensive heart disease. If there is lues there should be dilatation of the aorta. We have not a good view of the whole aorta, but so far as can be determined it is negative

The examination also shows calcified glands in the neck. That probably means a tuberculous infection of the cervical glands at some time. There is absorption at the apices of the roots of the teeth, which means apical abscesses.

So far as one can judge from the x-ray examination he had a very much enlarged heart of the hypertensive type, not the luetic type.

Dr. Fremont-Smith: Pulsus alternans of course is one of the few definitely bad prognostic signs. A patient can have angina pectoris and get over the attack and live a great many years. Pulsus alternans however means a bad prognosis, death occurring usually within a year.

It is interesting that we get this very marked inability to change the concentration of the urine, but we get it at a high level in cardiac failure and at a low level in chronic nephritis.

I do not believe that cervical abscess was very important. It was probably the breaking down of a gland. It is unusual for a tuberculous gland to break down at this time of life. It is more likely to be a secondary infection from the tonsils.

The blood pressure was 160/120 on the second admission. We can be pretty sure it had been a great deal higher earlier, before cardiac failure supervened.

I do not think there is anything in the interval before the third admission that is not consistent with the picture of cardiac decompensation. He had a big liver pulling on all the ligaments. That could have caused his pain, and the vomiting might be the result of chronic passive congestion.

Why this loss of weight? That may of course be due merely to chronic passive congestion and lack of appetite. I wonder if there was some other cause. Usually cardiac patients do not lose weight, or at least the loss of weight is very well hidden by the amount of fluid they retain.

The fact that the blood pressure is now

260/100 is very interesting and very difficult to understand in the light of his previous low blood pressure and increasing failure, because he was moderately dyspneic even while sitting up in bed.

One would expect a positive guaiac in the stools from chronic passive congestion alone.

I do not see that we have to assume anything except heart disease and the effects of chronic passive congestion. The immediate cause of death may very well have been an embolus.

I think we shall find a heart of the hypertensive type, not very much in the kidneys except chronic passive congestion, which will be found everywhere. There is probably a little fluid in the abdomen, possibly a little in the chest.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Hypertensive and arteriosclerotic heart disease with coronary occlusion.

DR. MAURICE FREMONT-SMITH'S DIAGNOSES

Hypertensive heart disease.
Chronic passive congestion, general, including the kidneys.
Probably ascites and hydrothorax.

ANATOMIC DIAGNOSES

Arteriosclerosis.
Hypertrophy and dilatation of the heart (hypertensive heart disease).
Coronary sclerosis and occlusion (right transverse).
Cardiac infarction, old and fresh.
Vascular nephritis, malignant type.
Chronic passive congestion, general.
Papillary adenocarcinoma of the kidney.
Cystitis.
Cholelithiasis.

PATHOLOGIC DISCUSSION

DR. TRACY B. MALLORY: We found a very much hypertrophied heart weighing 860 grams, with dilatation perhaps even more remarkable than the hypertrophy. The main branches of the coronary arteries showed slight atheromatous lesions only, but one small branch of the right transverse artery showed fresh thrombosis. There was an old area of infarction about a centimeter in diameter near the apex of the left ventricle and a smaller fresh one a little farther up towards the base.

There was chronic passive congestion everywhere.

The gall bladder contained a large number of stones.

The kidneys were interesting in presenting two distinct lesions, one of which was of importance in the case, the other not. There was a quite diffuse rather acute vascular nephritis, the type of thing one would expect to find with malignant hypertension, and that again is the type of vascular nephritis one would expect to get in a man only forty-three years old. The slowly progressive type is seen most often in people of fifty or upwards, the most rapidly progressive type in people younger than fifty. It had not progressed enough to cause any gross atrophy of the kidneys, so that it is not surprising that there was no renal insufficiency from the clinical point of view. A surprising finding was a hypernephroma of one kidney, rather small, only two centimeters in diameter, but rapidly growing. If the man had lived a few months longer he probably would eventually have died of that.

CASE 18072

A CASE OF RAPIDLY PROGRESSIVE HEMIPLEGIA

MEDICAL DEPARTMENT

An unmarried Irish-American saleswoman fifty-eight years old entered complaining of bleeding of five weeks' duration and weakness of the right arm of two hours' duration.

Five months before admission she noted innumerable small red spots on her legs. Five weeks before admission she had onset of frequent epistaxis, bleeding from the gums, a dry sticky feeling in the mouth and occasional coughing up of a little dried blood in the morning. She had vertigo, never severe and lasting only a few minutes at a time, occurring on change of position or on exertion. She had all of these symptoms at intervals. Two hours before admission she noticed tingling and weakness of the right arm.

Her past history was negative.

One brother had tuberculosis. She had no contact with him.

Clinical examination showed a well-nourished woman with pink cheeks, lying on her back in bed on two pillows, breathing quietly. When she was put on the examining bed she complained of numbness and weakness of the right arm, but was able to move the arm normally. While the examination was being done she found that the arm was entirely paralyzed and on being told to lift her right leg to test its strength she found she could not move it. Drooping of the right eyelid was noticed. Before the examination was finished she was unable to speak distinctly. All of these symptoms developed within thirty minutes. The skin of the arms and legs and to a less extent that of the body and head was covered with tiny petechiae. There were numerous large black and blue ecchymotic spots on the legs and arms. The fundi were not well seen, but it was believed that hemorrhages could be made out.

There was bleeding from the gums with marked receding of the gum under the left lower incisor. The tongue was dry and covered with blood. The edges of the mouth were blood caked. The heart was normal. The blood pressure was 140/90. The pulses were normal. The radials were slightly palpable. The pupils were normal. There was positive Babinski, more marked on the right.

There is no record of the urine. Blood examination showed 8,300 leukocytes, 88 per cent polynuclears, 4,150,000 reds. No platelets were seen. The smear was otherwise normal. The non-protein nitrogen was 39 milligrams.

The temperature was 99.1°, the pulse 91. The respirations were 25.

Within an hour and a half after admission the patient's right arm, leg and face had become paralyzed and she had sunk into coma. That night she died.

Clinical Discussion

BY MAURICE FREMONT-SMITH, M.D.

Of course that is the picture of purpura; the question is what is the cause of the purpura. She is fifty-eight years old. Primary thrombocytopenic purpura is very uncommon at that age. It usually occurs in much younger people. She may have a secondary purpura, a thrombopenic condition from an aplastic anemia. She was a saleswoman, so I assume she has not any particular reason to have aplastic anemia. Sometimes in aleukemic leukemia we have a marked reduction in the platelets which looks very much like a thrombopenic purpura. That is much more likely at fifty-eight than is a primary thrombocytopenic purpura.

If the pink cheeks were not artificial she evidently had not lost much blood in spite of this bleeding.

She must be developing cerebral hemorrhage under the very eye of the examiner, hemorrhage on the left side, probably in the internal capsule, catching both the sensory and the motor nerves.

She did not have aplastic anemia or the white count would be lower. She did not have aleukemic leukemia, because we have no record of abnormal white cells. The absence of platelets of course looks like a primary thrombocytopenic purpura, and as I say, that is a very rare thing at that age. When you find no platelets in the blood smear do not think because the patient feels well that the condition is not serious. I had a patient with Dr. Mallory who had ecchymoses and petechiae and no platelets. She was about fifty-five years old and was perfectly well otherwise. She died within six months, of hemorrhage. No one ever would have believed to look at her that that woman was not perfectly well. She was a robust looking, strong person with a normal red count until a few weeks before she died.

The patient in this case died of course of hemorrhage in the head. She might just as well have started to bleed from the gastro-intestinal tract or the vagina or the nose or the mucous membranes anywhere. I do not see anything here on which to base a diagnosis of anything except thrombocytopenic purpura.

Clinical diagnosis (from hospital record)

Thrombocytopenic purpura hemorrhagica with cerebral hemorrhage.

Dr. Maurice Fremont-Smith's diagnoses

Primary thrombocytopenic purpura.
Cerebral hemorrhage.

Anatomic diagnoses

(Primary thrombocytopenic purpura.)
Hemorrhage into the left cerebral hemisphere.
Subdural hemorrhage.

Pathologic Discussion

Dr. Tracy B. Mallory: We found nothing at autopsy except evidence of cerebral hemorrhage, which is all that we can expect to find in thrombopenic purpura; that is, it has no positive characteristic findings. We can make the diagnosis only by the exclusion of all the other things which might cause purpura.

The cerebral hemorrhage was in the left cerebral hemisphere occupying the major portion of the left motor area, and there was a large subdural hemorrhage as well.

All the other findings were essentially negative.

In a very considerable proportion of purpura cases of this sort, death is due to cerebral hemorrhage. I think in the group of those coming to autopsy here it is the commonest cause of death, the next commonest being hemorrhage after attempted splenectomies done in the effort to avoid this first complication.

Dr. Fremont-Smith: Does the bone marrow show nothing in such cases?

Dr. Mallory: Nothing except hyperplasia in proportion to their anemia.

Dr. Fremont-Smith: I think we should have reasoned that the hemorrhage was a cortical one from the slow development of symptoms. The first symptom was tingling and weakness of one arm. A hemorrhage into the internal capsule would be more likely to involve a larger area early. The fibers are here crowded together so closely that a lesion would be more likely to give a hemiparesis than a monoplegia.

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THE ENDOWMENT OF THE HOME AND THE CONTROL OF DIABETES

PROFICIENCY in the care of individual cases of sickness is admirable, but even more praiseworthy are the attempts of farseeing physicians to standardize the treatment of a disease, to organize the administration of remedial measures, and to strike at the causes from which the disease is believed to arise.

Certain diseases have already been attacked in this manner. Tuberculosis, smallpox, cancer and, more recently, rheumatic heart disease, have been the object of concerted action by physicians. Now a campaign against diabetes is proposed. The way in which this may be carried out is described in the talk on this subject which was given as one of the Harvard Health talks and was recently published by the Harvard University Press*. The author describes the tremendous advances which have been made in the management of diabetes; nevertheless, as he points out, there are between twelve and fifteen thousand diabetics in Massachusetts. His plan for control of the situation as a whole has two essential features; one is the establishment of perhaps ten diabetic centers, scattered throughout the state, at which laboratories can be developed at little extra cost to do the necessary tests, and to which patients may go for instruction in the management of their disease or for care during critical periods. The other essential is the employment of Wandering Diabetic Nurses, of whom there are already ten. These nurses, upon request by a physician in a community, go to that locality and spend perhaps a week in instructing diabetics, either in their homes or in a class, how to arrange their diets and how to employ insulin.

There are two distinct advantages in this plan. By the establishment of laboratories in different sections of the state, the physicians in each locality would be given some of the laboratory advantages which are now enjoyed by doctors connected with the larger hospitals. The second advantage comes from the employment of Wandering Diabetic Nurses; by employing these nurses to instruct their patients in their own homes, physicians in communities which do not possess hospitals will be enabled to retain control of their patients and will not have to send them to distant centers for training in the management of their diabetes. A busy practitioner has not the time to instruct his diabetics in the minutiae of weighing and preparing diets.

This plan carries the endorsement of the State Commissioner of Health. In a letter reprinted in this little book, Doctor Bigelow says:

"Your plan for clearing up diabetes in Massachusetts appeals to me. It utilizes existing public and private agencies, brings about coöperation between large and small hospitals and laboratories and will cost comparatively little. It will help the doctor because it paves the way for an endowment of the general practitioner and thus makes him more on a par with the man who has a service in an endowed hospital.

"If you can put this program through, the State will not need to concern itself with diabetes and it will be a demonstration of what can be accomplished without governmental participation."

Such a plan, if carried through, (we do not doubt that it will be) will prove a long step forward in the control of diabetes. It is the sensible, the intelligent thing to do. It will keep the doctor informed as to progress in this direction and will make his work easier and more satisfactory; by giving diabetics definite instruction and the encouragement which comes from the knowledge that they are integral members of an organized group, it will add years to their lives. Such an enterprise as this should have the support that it so well deserves.

*Harvard Health Talks. Diabetes, Its Control by the Individual and the State, by Elliott P. Joslin, M.D. Published by the Harvard University Press, Cambridge. 1931. 70 pages.

KUMMELL-VERNEUIL'S DISEASE

In the last year or two a great deal of interest has been evinced in the diseases of the vertebral column, especially those which simulate Pott's disease. There have been many publications on this subject, largely from the Continent, and a good review of the recent literature appeared in the *Paris Médical,* July 18, 1931 (*also, Lancet,* September 26, 1931). Particular attention was called to the Kümmell-Verneuil syndrome, a condition which usually occurs in men between the ages of twenty-five and forty-five following either direct or indirect trauma. The trauma may be very slight. The disease first appears as pain along the course of the dorsal or lumbar nerves. Occasionally there is some disturbance of gait and practically always tenderness is elicited by pressure over the spinous processes of the affected vertebrae. There is often associated muscular spasm and limitation of extension. The acute symptoms disappear within ten days, to be followed by a period of six to twelve months in which no symptoms appear. Later, kyphosis slowly develops, pain often returns, and occasionally there are signs of pressure upon the spinal cord.

Some physicians, including Verneuil, consider the pathologic condition to be one of fracture, while others, of which Kümmell is the leading exponent, believe that there is a peculiar form of post traumatic osteoporosis. Both of these views have been set aside by Professor Georg Schmorl of Dresden (Geist, E. S. *J. A. M. A.* 96:1676, May 16, 1931; *Lancet* 2:697, Sept. 26, 1931 and 1:90, Jan. 9, 1932), who points out that the initial trauma produces a crack in the intervertebral surface of a vertebra; in the course of time the pressure of the intervertebral disc causes this fissure to gape, and herniation of the disc into the spongy tissue results, possibly carrying with it the nucleus pulposus. Pressure-atrophy of the bone follows, and, at a later date, the vertebra collapses.

The opinion of Professor Schmorl is based upon the examination of over 7,000 spines in his laboratory at Dresden. A report of his work by an English student, Dr. O. A. Beadle, has recently been published as one of the Medical Research Council Special Reports (Series No. 161). Dr. Beadle's report is a first-hand description of Schmorl's work and of the many specimens in the pathologic department of the Friedrichstädter Krankenhaus at Dresden. The monograph is beautifully illustrated. Dr. Beadle is convinced of the paramount importance of the intervertebral discs in preserving the normal form of the spine. Their disease may lead to the Kümmell-Verneuil syndrome, or adolescent kyphosis.

THIS WEEK'S ISSUE

Contains articles by the following named authors:

Lahey, Frank H. M.D. Harvard University Medical School 1904. F.A.C.S. Director of Surgery, The Lahey Clinic. Surgeon-in-Chief to New England Baptist Hospital. Surgeon to New England Deaconess Hospital. His subject is "Resection of the Right Colon and Anastomosis of the Ileum to the Transverse Colon After the Mikulicz Plan." Page 315. Address: 605 Commonwealth Avenue, Boston.

Fulton, John F. B.S., B.A., M.A., Ph.D., M.D. Harvard University Medical School 1927. Junior Associate, Neurological Surgery, Peter Bent Brigham Hospital 1928. Fellow, Magdalen College, Oxford, 1928-30. Sterling Professor of Physiology, Yale University 1930-. His subject is "Haller and the Humanization of Bibliography." Page 323. Address: The School of Medicine, Yale University, 333 Cedar Street, New Haven, Conn.

Heffron, Roderick. A.B., M.D. Harvard University Medical School 1928. Field Director, Pneumonia Study and Service, Massachusetts Department of Public Health. His subject is "Massachusetts Pneumonia Program." Page 328. Address: Room 511-H, State House, Boston, Massachusetts.

Camp, Paul D. A.B., M.D. University of Virginia 1928. Cardiac Resident and Dalton Scholar, Massachusetts General Hospital 1930-31. Address: University College Hospital, London, England. Associated with him is:

Sprague, Howard B. A.B., M.D. Harvard University Medical School 1922. Assistant Physician, Massachusetts General Hospital. Visiting Physician and Research Director, House of the Good Samaritan. Assistant in Medicine, Harvard Medical School, Courses for Graduates. Address: 270 Commonwealth Avenue, Boston. Their subject is "Progress in the Study of Cardiovascular Disease in 1930." Page 330.

THE BOSTON MEDICAL LIBRARY

JOHN FREIND, M.D., F.R.C.P., F.R.S.
1675-1728

One of the early medical historians, also a physician of note in his own right, a contemporary of Sir Hans Sloane, Richard Mead and the group of seventeenth century English physicians who were distinguished for their scientific achievements and their general culture, was John Freind. The England of that day was having its troubles as she is now, though they were of a somewhat different character. The

Stuarts "had been riding for a fall" but the decapitation of a few of them, one no less than a King, had by no means been a source of discouragement. The country at large was becoming distrustful of them, fearful that they were scheming to bring back the church of Rome as the established religion and to this they were opposed. At the time of Freind's birth and youth the country was in a state of more or less political anxiety and this evidently exerted a considerable influence upon him, leading him to take sides, later in life, in the strained political situations that developed, an attitude that exposed anyone who did so in those days, to hardships so severe, at times, as to lead to a loss of personal liberty. It was upon the occasion of his incarceration in the Tower that he found leisure to amuse himself by a study of the ancients, in so far as some of them were engaged in the practice of medicine. He thus made a "virtue of necessity".

He was a son of William Freind, a distinguished clergyman of the established church and a rector of the parish of Croton, in Northamptonshire. He had two brothers, both of whom entered the ministry, one building a career of considerable brilliancy, the other satisfied with a life of little accomplishment. The subject of this sketch obtained his education at Westminster School and Christ Church, Oxford. He achieved some distinction at Oxford for his translation of two Greek texts and an edition of the Metamorphoses of Ovid. Early in his classical training he evinced an interest in medical science, particularly anatomy and the newer science of chemistry. He was graduated from Oxford with a B.A. degree in 1698 and three years (1701) later took his master's degree in Arts. In medicine he belonged to a school of philosophy which sought to interpret the physical and mechanical phenomena of disease. This school was largely influenced by the genius of Newton. As science became more and more developed it was inevitable that this philosophy should give way, which it did, pretty completely, by the time of Cullen and Black. Prior to 1703 he had published only a few letters in the Philosophical Transactions but in this particular year he put out his first considerable volume, which was an attempt to show that the phenomenon of menstruation was the result of a periodic plethora. This was called Emmenologia. A year later he was appointed to the chair of Chemistry at Oxford but gave only one course of lectures, having been invited to go to Spain with the Duke of Peterborough who was conducting a campaign in the war in which England was engaged at that time. When this experience was over he made the circuit of the European continent visiting the famous schools of Italy and making contacts with certain of the outstanding teachers of the day. Upon his return, in publishing a defense of the Duke of Peterborough's conduct of the war in Spain, he gave the first intimation of his flair for politics, which was later to lead him into difficulties. In 1707 he returned to England and was given his doctorate in medicine from Oxford. In this same year he published his lectures on chemistry, delivered at Oxford, before campaigning in Spain. And in 1716 he was elected to fellowship in the Royal Society. Shortly after this he accompanied the Duke of Ormond to Flanders, as his personal physician. Upon his return to England in 1713 he settled down to practice in London. Outside of court circles Freind's career had been such as to bring him the patronage of a large clientele. As a Tory, the political party of his choice, he had no expectation of favor at Court. He rose to prominence in the Royal Society, being chosen as Gulstowian Lecturer in 1718; he also gave the Harvey Oration in 1720. He was Censor in 1718 and 1719. He was quite busy with his pen at this time, editing some of Hippocrates' works and entering into a discussion of the treatment of smallpox, which topic was then agitating the public mind very strongly. He stood for election to Parliament from a district in Cornwall and upon taking his seat in that body became distinguished as a man of conviction, manifesting no hesitancy in speaking his mind where his conscience impelled him to action. On suspicion of having been implicated in the failure of the "South Sea Bubble" he was convicted and imprisoned in the Tower, along with a number of other distinguished Tories. This was in 1722-1723. It was while there that he turned his attention to Medical History. The outstanding work of that period on this subject was Le Clerc's "History of Physic." Le Clerc was a scholar whose researches had brought the history of medicine down through Galen's time. There was left a gap of 1200 years which Le Clerc, in a later printing of his first scholarly edition, had made a very superficial attempt to bridge over, chiefly by padding the story with a lengthy account of the vagaries of Paracelsus. Freind undertook to cover this period more accurately as to dates and to present the claims of Oribasius, Aetius, Alexander and Paulus for distinction, rather more prominently than had Le Clerc. He defends Harvey in the claims made for the priority of his discovery of the circulation as against those of Servetus, Columbus and Cisalpinus. In discussing the 500-year period between 560 and 1060 he brought out what he believed to be evidence of the first scientific study of the urine, in a tract by Theophilus and Stephen. He cites the fact that Actuarius, who practiced in Constantinople, and was Lord Chamberlain to the Emperor, was aware that there might be a period of as much as seven years in the latency of symptoms after the bite of a rabid animal. He closed his his-

tory with some remarks upon the value of experience in the practice of medicine, indicating that it matters little how much knowledge a physician may have, if he does not subject his knowledge to the tests of experience, and says, "were it not for this the oldest practitioner would always be the best physician, and there would be little or no difference, even as to the scientifical part, between an old woman and a regular professor". In the "Gold Headed Cane" is an account of the way in which Freind finally was released from the Tower. It appears to have been through a refusal on the part of Richard Mead to prescribe for Sir Robert Walpole whom he had been summoned to attend in an illness, unless he set free his friend. This he did and it is further recorded in this same book that on the evening after Freind's release he met with Mead, Sir Hans Sloane, Arbuthnot and others, at Dr. Mead's house, where he was presented with the sum of 5000 guineas, said to have been collected by Mead, but whether from Freind's patients or as a present from his associates is not stated. He resumed his practice, retained his seat in Parliament and it is recorded that in 1725 he presented a petition to the House of Commons, from the Royal College of Physicians, to restrict the use of strong, spirituous liquors. In 1727 he became physician to the Prince of Wales, later George II, and after George's accession he was appointed physician to Queen Caroline. His career was brought to an untimely end, a year later, when he succumbed to a fever. His death occurred in his fifty-third year, on July 26, 1728. Though he was buried in Hitcham, in Berks, he was honored by the erection of a monument to his memory in Westminster Abbey. Though not in any sense a genius he appears to have been a scholarly physician to whom the historical method of study made a strong appeal.

MASSACHUSETTS LEGISLATIVE NOTES

THE PETITION OF THE MIDDLESEX COLLEGE OF MEDICINE AND SURGERY

At a hearing before a committee of the Legislature February 9 objections to granting further powers to the Middlesex College of Medicine and Surgery were voiced by the Massachusetts Commissioner of Education, Payson Smith; Dr. George H. Bigelow, Commissioner of Public Health; Dr. Stephen Rushmore, Secretary of the Board of Registration in Medicine; and by a citizen of Waltham.

The American Medical Association was alleged to be a "medical trust" in the usual attack on the Association by some of the proponents of the bill. This assertion appears to carry weight with uninformed persons and is used on all occasions when attempts are made to overcome the opposition of physicians to measures which do not meet the approval of the majority of the profession.

HOUSE 1109*

At the request of Mr. MacLeod of Chelsea, the petition of Max Ulin for the establishment of the University of Massachusetts and to define its powers and duties, was taken from the files of the preceding year. Education.

THE COMMONWEALTH OF MASSACHUSETTS

In the Year One Thousand Nine Hundred and Thirty-Two

An Act establishing the University of Massachusetts.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

SECTION 1. The General Laws are hereby amended by inserting after chapter seventy-five, under the title, University of Massachusetts, the following new chapter:—

CHAPTER 75A

UNIVERSITY OF MASSACHUSETTS

SECTION 1. There is hereby established in the commonwealth an institution of learning by the name and style of the "University of Massachusetts."

SECTION 2. The government of the University of Massachusetts shall be vested in a board of regents, to consist of seven members chosen from the state at large, which board the governor shall appoint, by and with the advice and consent of the council.

SECTION 3. Of the regents first appointed hereunder, one shall be appointed for the term of one year, one for the term of two years, one for the term of three years, one for the term of four years, one for the term of five years, one for the term of six years, and one for the term of seven years, from July first in the current year; and thereafter, as the term of office of a regent expires, his successor shall be appointed for the term of seven years.

SECTION 4. The board of regents and their successors in office shall constitute a body corporate, by the name of "The Regents of the University of Massachusetts", and shall possess all the powers necessary or convenient to accomplish the objects and perform the duties described by law, and shall have the custody of the books, records, buildings and other property of said University of Massachusetts. The board shall elect a president, secretary and treasurer, who shall perform such duties as shall be prescribed by the by-laws of the board. The secretary shall keep a faithful record of all the transactions of the board. The treasurer shall perform all the duties of such office, subject to such regulations as the board may adopt, and for the faithful discharge of all his duties shall execute a

*See Hearings, page 363.

bond in such sum as the auditor of the commonwealth may direct.

SECTION 5. The time of the election of the president, secretary and treasurer of said board, and the duration of their respective terms of office, and the times for holding the regular annual meeting and such other meetings as may be required, and the manner of notifying the same, shall be determined by the by-laws of the board. A majority of the board shall constitute a quorum for the transaction of business, but a less number may adjourn from time to time.

SECTION 6. The board of regents shall enact laws for the government of the university in all its branches, elect the requisite number of professors, instructors, officers and employees, and fix the salaries and the term of office of each, and determine the moral, physical and educational qualifications of applicants for admission to the various courses of instruction; but no instruction either sectarian in religion or partisan in politics shall ever be allowed in any department of the university, and no sectarian or partisan test shall ever be allowed or exercised in the appointment of regents or in the election of professors, teachers or other officers of the university, or in the admission of students thereto, or for any purpose whatever. The board of regents shall have the power to remove the president or any professor, instructor or officer of the university, when, in their judgment, the interests of the university require it. The board may prescribe rules and regulations for the management of the libraries, museums, laboratories and all other property of the university and of its several departments, and for the care and preservation thereof, with penalties and forfeitures, by way of damages, for their violation, which may be sued for and collected in the name of the board before any court having jurisdiction of such action.

SECTION 7. On or before October first of each year the regents, through their president, shall submit to the state board of education, for transmission to the governor, a report for the year ending on the preceding thirtieth day of June. This report shall exhibit in detail the progress, conditions and wants of the university, the courses of study which have been offered, the number of professors and students, the amount of receipts and disbursements, together with the net costs and results of all the important investigations and experiments, and such other information as they may deem important or the board of education may require. This report shall include all estimates which the regents intend to submit to the auditor of the commonwealth for transmission to the legislature.

SECTION 8. The board of education shall transmit the report described in section seven of this act to the governor not later than December first of each year, and shall accompany such report with such comments, suggestions and recommendations as it may deem important.

SECTION 9. The president of the university shall be the president of the faculty or of the several faculties as they may be hereafter established, and the executive head of the instructional force in all its departments; as such he shall have authority, subject to the board of regents, to nominate all instructors to the board of regents, to make such recommendations as he may deem advisable for the proper conduct and development of the university, and to give general direction to the instruction and scientific investigations of the university. The immediate government of the university shall be entrusted to the faculty, but the regents shall have the power to regulate and approve courses of instruction, to confer such degrees and grant such diplomas as are customarily conferred in universities, and to confer upon the faculty through by-laws the power to suspend or expel students for misconduct or other sufficient cause described by such by-laws.

SECTION 10. The object of the University of Massachusetts shall be to provide, for the inhabitants of the commonwealth and such others as the board of regents may from time to time admit in accordance with provisions to be established in their by-laws, means and opportunities for obtaining general and professional education supplemental and additional to that which is now provided for the inhabitants of the commonwealth by schools and colleges supported in whole or in part by revenues derived from taxation. Provision shall be made by the regents for the organization and support of correspondence and other extension courses, as they may deem necessary and all correspondence and extension courses now conducted by the department of education shall, after the effective date of this act, be under the supervision of the regents of the university.

SECTION 11. The university shall be open to female as well as male students, under such regulations as the board of regents may deem proper.

SECTION 12. No student who shall have been a resident of the commonwealth for one year next preceding his admission shall be required to pay any fees for tuition in the university, except in professional departments. The regents may prescribe rates of tuition for students in professional departments, and fees for the use of apparatus and equipment. The regents may also establish suitable tuition rates for students who are not residents of Massachusetts. The regents shall establish, in connection with the university, an employment bureau for the purpose of enabling graduates of the university to find suitable positions, and to assist students, during the period of their attendance, in finding needed remunerative employment.

SECTION 13. The board of regents provided for in this chapter shall be appointed within ninety days after its effective date.

SECTION 14. The sum of ten million dollars is hereby appropriated from moneys in the treasury of the commonwealth and not otherwise appropriated, which sum may, with the approval of the commis-

sioner of education, be expended for the following purposes, to wit:—

First.—The payment of the salaries of the president and other officers of administration and instruction, and such other expenses as may be necessary until further appropriations for these purposes shall have been made.

Second.—The purchase of a site or grounds for said University of Massachusetts, said location to consist of not less than three hundred acres located at a distance of not more than fifty miles from the state house of the commonwealth.

Third.—To advertise for and obtain plans and specifications for university buildings, under such rules and regulations as the board may impose.

Fourth.—For the payment of the necessary expenses of the said board in connection with the purchase of a site and the erection of university buildings thereon.

SECTION 15. For the purpose of carrying out the provisions of this act, the board of regents may, in the name and on behalf of the commonwealth, from time to time, take or acquire by purchase or otherwise such lands, buildings and rights in land as in its opinion may be necessary to accomplish the purposes of this act. In the event of the taking of any lands, buildings or rights in land by said board of regents, the board shall file in the proper registry of deeds a description thereof, sufficiently accurate for identification, with a statement signed by the board, or by a majority thereof, that the same are taken under the provisions of this act, in the name and behalf of the commonwealth; and the said act and time of filing shall be deemed to be the act and time of the taking of such lands, buildings or rights in land and shall be sufficient notice to all persons that the same have so been taken. The title to the lands, buildings and rights in land so taken shall vest in the commonwealth and its assigns forever. The commonwealth shall pay all damages sustained by any person by reason of any taking under authority of this act. Said board shall estimate the damages for such taking and submit the estimate to the governor and council for approval, and may, with the approval of the governor and council, agree with any such person upon the damages to be paid for such taking. If said damages cannot so be agreed upon, such person may, within two years after the taking, file in the clerk's office of the superior court for the county or counties wherein said lands shall be taken a petition for the determination of the damages, and thereupon the court shall appoint a commission consisting of three disinterested persons to whom the petition shall be referred, and who shall determine the damages and report thereon to the court. Said board shall, upon approval of the governor and council of its estimates of damages, or upon the filing of any determination made by a commission as aforesaid, offer, in behalf of the commonwealth, to pay the person sustaining the damages the amount so estimated or determined; and if such person shall, in accordance with such notice and within one year after being so notified, deliver a satisfactory release of the damages to the board, the board shall certify to the treasurer of the commonwealth the amount to be paid to such person, and the treasurer shall pay the same. Said board or any person whose property is taken under the right of eminent domain, if dissatisfied with any determination of damages made by any commission, may, within one year after the time when such determination is filed in court, file in said court a claim for a trial by jury to determine the damages, and thereupon the damages shall be determined by a jury in said court in the same manner as if the petition had come before a jury for its determination of damages in the first instance. The commissioners shall receive such compensation as may be determined by the court. If, upon hearing by the commissioners or upon trial, damages are increased beyond the amount which the commonwealth offered to pay therefor prior to the appointment of the commission or to the trial, as the case may be, the person sustaining damage by reason of the taking shall recover costs; otherwise the person shall pay costs, and costs shall be taxed as in civil cases.

SECTION 16. Commencing with the fiscal year nineteen hundred and thirty-two, there shall be levied and collected annually a state tax of one fifth of one mill on each dollar on the assessed valuation of the towns and cities of the commonwealth, which amount, when so levied and collected, shall be appropriated for the use of the University of Massachusetts, to remain in the treasury of the commonwealth subject to the order of the board of regents.

SECTION 17. The regents shall receive the actual amount of their expenses in traveling to and from, and in attendance upon, all meetings of the board, or incurred in the performance of any duty in pursuance of the direction of the board, the accounts of such expenses to be duly audited in the same manner as other expenditures on behalf of the commonwealth.

SECTION 2. This act shall take effect upon July first in the current year.

Another bill by Mr. Sawyer of Ware (heard on February 18 before the Committee on Education) has much the same purpose as House 1109.

HEARINGS

HOUSE 567—Petition of James W. Turner, chairman of the selectmen of Scituate, that further provision be made for employment of additional persons in elimination of the mosquito nuisance. February 24. Room 489. 10:30. Agriculture.

HOUSE 1109*—Petition (from files of 1931) of Max Ulin for the establishment of the University of Massachusetts and to define its powers and duties. February 23. Room 481. 10:30. Education.

HOUSE 874—Petition of John E. Daniels relative to notification and investigation precedent to discon-

*Text of this bill appears on page 361.

tinuance of compensation of employees injured in industrial accidents. February 23. Room 435. 10:30. Labor and Industries.

HOUSE 876—Petition of John E. Daniels for regulation of payment of compensation to employees partially incapacitated in industrial accidents. February 23. Room 435. 10:30. Labor and Industries.

HOUSE 877—Petition of John E. Daniels for regulation of payment of compensation to employees totally incapacitated in industrial accidents. February 23. Room 435. 10:30. Labor and Industries.

SENATE 201—Petition of the Citizens' Committee Opposing Compulsory Vaccination, by John S. Codman, chairman, and another, that inoculation and vaccination be made voluntary. February 25. Room 450. 10:30. Public Health.

HOUSE 221—Petition of Fred W. Connolly that the dispensing of medicine by pharmacists and physicians be regulated further. March 1. Room 450. 10:30. Public Health.

HOUSE 284—Petition of Samuel B. Woodward and Edward J. Kelley for legislation to require the vaccination of children in private schools. February 25. Room 450. 10:30. Public Health.

HOUSE 904—Petition of William Lloyd Garrison, Jr., that the public be protected from impure vaccine and that remedies be provided for the abuse thereof. February 25. Room 450. 10:30. Public Health.

MISCELLANY

OFFICERS ELECTED BY THE BOSTON TUBERCULOSIS ASSOCIATION

At the recent annual meeting of the Boston Tuberculosis Association the following officers were chosen: President, John B. Hawes, 2nd, M.D.; Treasurer, George S. Mumford; Vice President, James J. Minot, M.D.; Clerk, Miss Isabel F. Hyams. One hundred and eighty-seven children were cared for at Prendergast Preventorium during the year, according to the report of Dr. Hawes.

THE APPOINTMENT OF DR. LEROY E. PARKINS

Dr. Leroy E. Parkins has been elected Secretary of the School for Graduates, Harvard Medical School.

A TRIBUTE TO DR. BURRAGE

In a paper on State Society Records presented at the Annual Conference of Constituent State Medical Associations at Chicago, November 13 and 14, 1931, Dr. Emma Pope makes the following reference to the sixth edition of the report on the Massachusetts Medical Society membership as follows:

Indeed, having but recently received from the Massachusetts Medical Society a sixth edition of their complete report on over 11,000 Fellows of that association, over 6,000 of whom are not now its active members, and having found contained therein a most complete record of these 11,000 Fellows—the dates of their admission, their names in full, their latest residences, records of the termination of their fellowship, whether by removal from the state, retirement, resignation, expulsion or deprivation by the Council, the dates of their deaths and records of their ages at death—I marvel that the compiler of those most unusual statistics, Dr. Burrage, is not now telling this group of state secretaries how membership records should be kept. The preface to that volume states that the information contained therein was compiled from 67 volumes beginning with the first catalogue of 1789, a really stupendous undertaking. Doubtless Dr. Burrage can add much to the discussion of membership records.

THE APPOINTMENT OF DR. HARMER

Dr. Torr Wagner Harmer has been appointed to the position of Instructor of Anatomy in the School of the Museum of Fine Arts. This course is open to all students of the School.

ELECTION OF DR. SKIRBALL

At the annual banquet of the Staff of the Boston Dispensary Dr. Joseph J. Skirball was elected president; Dr. Louis E. Phaneuf was elected Vice-president and Dr. Robert W. Buck, Secretary-Treasurer.

SCARLET FEVER SEEMS TO BE INCREASING

There has been a considerable increase in the number of cases of scarlet fever in New York City. Reports from other sections of the country indicate a rather widespread distribution of the disease.

HARD TIMES FOR THE ROYAL SOCIETY OF MEDICINE

Economic difficulties in England are affecting the Library of the Royal Society of Medicine as shown by a statement published in the *New York Times* that there is serious apprehension about the income of this valuable collection of 150,000 books with no apparent relief in sight.

The officers of the Boston Medical Library have a sympathetic understanding of the perplexities of their English brothers.

CORRESPONDENCE

"ADOLESCENT KYPHOSIS"

To the Editor of the *New England Journal of Medicine:*

The subject of disease of the intervertebral discs, leading to a condition known as "adolescent kyphosis" has recently been extensively reviewed in the medical literature by orthopedic surgeons as well as neurologists (*Lancet*, Sept. 26, 1931, Jan. 9, 1932). A patient, with what is presumed now to be this disease, was seen a number of years ago. At that time his condition was diagnosed as "vertebral epiphysitis".

The history of the patient is, briefly, as follows:

L. D. B., male, aged 15, was first seen on January 15, 1926, in consultation with Dr. John Dane. There was a history that the child fell, at the age of 8, while playing in a barn, landing on his feet. Numbness of the legs, without actual paralysis, was fol-

FIG. 1.

lowed by stiffness for a few days. There was slight pain in the back. The sphincter muscles were not involved. Very slowly, after a period of a year or more, the patient developed a spastic paraplegia with contracture of the tendo Achillis. Bilateral tenotomy was done at the age of 13. His past and family histories were not relevant.

When first examined, he showed spasticity of his legs with a tendency toward scissor gait. The knee jerks were greatly exaggerated and there was a bilateral Babinski sign. There was no evidence of change in sensation in the legs and the examination was otherwise negative. Mentally he appeared normal. The report on the x-ray examination by Dr. A. S. Macmillan, January 23, 1926, follows:

"There is an involvement of the 8th, 9th, 10th, 11th, and 12th dorsal vertebrae which is probably the result of injury. It is a condition that has been described as 'traumatic epiphysitis'. The lateral view shows normal 5th and 6th dorsal vertebrae. The 8th is partially wedge shaped and the 10th is very definitely wedge shaped. The epiphyses of the rest of the vertebrae are not developed. The intervertebral disc between the 10th and 11th is partially absorbed. This is an unusual condition and is caused by the interference with the blood supply —usually considered as being due to trauma." (Fig. 1.)

A diagnosis of "vertebral epiphysitis" was made based upon the description of similar cases by Dr. Joseph Buchman in the *Journal of Bone and Joint Surgery* for October 1925 and Dr. Macmillan's report. The patient was seen again a year later, without any definite change in his condition. In May 1928 Dr. Macmillan reported, after further examination, that "the lower border of the 8th dorsal vertebra shows interference with the normal growth, and the outline of the 9th, 10th, and 11th is also irregular. There is no further compression, according to the lateral view, than on previous examination and the calcium content of the bone appears to be more nearly normal. Owing to the slight curvature in this region, the antero-posterior views appear less distinct than the lateral. On the whole there is no further involvement." (Fig. 2.)

FIG. 2.

It seems quite probable, in view of the more recent work, especially that of Professor Georg Schmorl of Dresden (Geist, E. S. *J. A. M. A.* 96: 1676, May 16, 1931), that the condition actually was more like "adolescent kyphosis" (Kümmell-Verneuil) than "vertebral epiphysitis".

Very truly yours,

HENRY R. VIETS, M.D.

Boston, February 3, 1932.

ACTION OF THE WORCESTER DISTRICT MEDICAL SOCIETY RESPECTING THE CHIROPRACTIC AND DR. WOODWARD'S VACCINATION BILLS

February 15, 1932.

The *New England Journal of Medicine*,

The Worcester District Medical Society held its February meeting at the Worcester State Hospital last Wednesday evening, with over 175 doctors in attendance, and at the business session of this meeting the following Resolutions were unanimously passed concerning the action of the Society to-

ward combating the approaching Chiropractors' Bill which is to come before the Legislature next month:

1. Be it Resolved that the Worcester District Medical Society spend, if necessary, up to the sum of $200.00 for printed stationery, dinners or legislators and other expenses incurred in an organized effort to combat the coming Chiropractors' Bill and to help pass the Vaccination Bill.

2. Resolved that the members of the Worcester District Medical Society draw up two petitions concerning (1) the Chiropractors' Bill and (2) the Vaccination Bill, one set of these petitions to be signed by all members of the Worcester District Medical Society and the second set to be sent to each member of the Medical Society for such member to use in the obtaining of at least ten or more signatures of voters in this district.

The circulation of the above petitions will insure the signatures of over 300 doctors from this district against the Chiropractors' and for the Vaccination Bill and we hope to acquire the signatures of at least 4,000 voters in this district who also feel that they are in sympathy with the Vaccination and opposed to the Chiropractors' Bill.

Our Society believes that each of the other District Societies of the Massachusetts Medical Society should carry out a campaign along the lines of the Worcester District campaign and in so doing our State Medical Society could present at least 50,000 signatures of voters before the Legislature concerning these Bills, and this list would include the names of over 4,000 practicing physicians. We believe that a list of signatures such as we are acquiring will have a definite influence on the members of the present legislative bodies when they consider the above Bills.

Very cordially yours,

ERWIN C. MILLER, *Secretary*,
Worcester District Medical Society.

A REPLY TO "A REACTION TO AN APPEAL TO THE BOSTON MEDICAL LIBRARY"

I have read with much interest the letter from Dr. Roy J. Ward of Worcester in the February 4, 1932 issue of the *Journal*, page 249, the reply by Miss Blake Beem and the Editorial Note.

The authors of the replies to Dr. Ward's letter are to be commended for the clarity of their definitions of the rules governing the Boston Medical Library.

That those who solicited funds for the Boston Medical Library were not automatically made members of the Library may be considered unfortunate by some. Had this been done, the yearly membership dues to the Library would have dwindled to near the vanishing point.

Practicing outside metropolitan Boston, my position as regards the use of the Library is somewhat analogous to Dr. Ward's. I have been unable to make use of the privileges which the Library affords as much as I have wished.

In the fifteen years which I have been a member of the Library I have probably averaged to visit the reading room twice a month. My only complaint has been that Mr. Ballard, the Assistant Librarian, Miss Beem and their assistants have always erred on the side of getting out too much literature on subjects in which I was interested. For this work there has been no charge.

It may be of interest also to know that any volumes or articles not in the stacks of the Boston Medical Library may be obtained from the Surgeon General's Library without extra expense.

The only books in the Library which I have not been allowed to bring to my home have been some of the rare old volumes which are almost priceless.

As a member Dr. Ward would be accorded the same privileges as other members.

I have only praise to offer for the efficient work done by Mr. Ballard, the Assistant Librarian, and his corps of assistants at the Library.

GEORGE A. MOORE, M.D.

Brockton, Massachusetts.

THE REGULATIONS AND NEEDS OF THE BOSTON MEDICAL LIBRARY

To the Editors of the *New England Journal of Medicine:*

The editorial in the January 28 issue of your *Journal* calls attention to two great needs of the Boston Medical Library. First, the urgent necessity of procuring funds for general administrative purposes, which, at the present time, can only be procured through an increase in the membership; secondly, the need for additional funds to complete the stack building which is most urgently needed to overcome the greatly crowded conditions, which at present exist and which greatly hamper the work of the Library. The Boston Medical Library is one of the great libraries in the country and enjoys an international reputation and is recognized as an essential institution, not only in Massachusetts, but in all of New England.

Your editorial calls attention to the fact that while the membership of the Massachusetts Medical Society exceeds 4600 members that the membership of the Boston Medical Library amounts to only slightly more than 800 members, and that the individual members of the Massachusetts Medical Society should become members of the Library and thereby give it much needed support. Approximately 700 of the 800 members of the Boston Medical Library are also members of the Massachusetts Medical Society, and, therefore, pay their dues to both organizations, but the only financial support the Massachusetts Medical Society gives to the Boston Medical Library is its share in the upkeep of the building they use in common. The Society did coöperate with the Library in raising funds for the

erection of the first unit of the new building and this has led to misapprehension among some members of the Massachusetts Medical Society. They think that because they are members of the Society and have contributed to the joint fund that they also belong to the Library's membership. This is not true as the joint campaign was solely for funds for the new building and did not carry with it any rights of membership. It is obvious that it would be unfair for the 700 members of the Massachusetts Medical Society to provide the services in books and journals for the balance of the Society's membership of over 3900 men. If this idea is prevalent to any considerable extent, it is now hoped that such members of the Massachusetts Medical Society, who have been laboring under the misapprehension that they were bona fide members of the Library, will now join an institution that has so much to offer them.

The Boston Medical Library is a circulating library for New England, meaning that it lends its books to its members or to accredited libraries in this part of the country. The membership of the Library is divided geographically into two classes, consisting of physicians living in the greater Boston area and those outside of the area. The fees of these two classes are quite different, as it is obvious that the physician living in greater Boston has access to the Library and can make greater use of its facilities. The physicians living outside of the greater Boston area may become Non-Resident Fellows at an annual fee of $5.00, which gives them all the privileges of the Library except participation in its control. The control of the Library is vested in the Fellows and any member of the Massachusetts Medical Society may become a Fellow upon the payment of $15.00 a year. Physicians in Massachusetts and other New England States may have occasional use of the Library even if they are not members by applying to their local library, either medical or public, to which books will be sent for the use of the doctor. It is easily understood that when the principal asset a member has by belonging to the Library is the privilege of borrowing its books and the use of its Reference Department, that membership cannot be transferable and it is unfair to lend to Non-Members.

So many of the trust funds of the Boston Medical Library are restricted that the institution can only look to unrestricted endowment and increased membership to supply the needs of a steadily increasing budget. A wider extension of the membership of the Library, in all its classes, from among the membership of the Massachusetts Medical Society would be of very material assistance and it is hoped that the members will signify their intention of joining the Library by writing to the Membership Committee at the Library. The Library is greatly in need of funds to complete its building and for general endowment purposes, and efforts on the part of the members of the Massachusetts Medical Society and the Library to interest benevolent laymen in the work going on here, encouraging them to regard this form of service as on a par with any public health work that is now being so generously supported by the laity, might be of even greater help.

CHARLES F. PAINTER, M.D.
Librarian, Boston Medical Library.

AN ANECDOTE OF AMBROISE PARÉ

Mr. Editor:

The following story concerning Ambroise Paré and the Duc de Guise is from Balzac's, "About Catherine de Medici":

"The way and the occasion of the Grand Master's being wounded is not without interest here, for it was healed by the daring of one of the personages of this drama, Ambroise Paré, who was under obligation to the Syndic of the furriers. At the siege of Calais the Duke's head was pierced by a lance which, entering below the right eye, went through to the neck below the left ear, the end broke off and remained in the wound. The Duke was lying in his tent in the midst of the general woe, and would have died but for the bold promptitude and devotion of Ambroise Paré.

" 'The Duke is not dead, gentlemen,' said Paré, turning to the bystanders, who were dissolved in tears. 'But he soon will be,' he added, 'unless I treat him as if he were, and I will try it at the risk of the worst that can befall me. . . . You see!'

"He set his left foot on the Duke's breast, took the stump of the lance with his nails, loosened it by degrees, and at last drew the spear-head out of the wound, as if it had been from some senseless object instead of a man's head. Though he cured the Prince he had handled so boldly, he could not hinder him from bearing to his grave the terrible scar from which he had his name. His son also had the same nickname for a similar reason."

Yours very truly,

WM. PEARCE COUES, M.D.

February 10, 1932.

NOTICES

MEDICAL CLINIC AT THE PETER BENT BRIGHAM HOSPITAL

At 3:30 P. M., on Thursday, February 25, in the Amphitheatre of the Peter Bent Brigham Hospital, a medical clinic will be given by Dr. Henry A. Christian, to which physicians are cordially invited. The clinics will be held regularly on Thursday afternoons.

CORRECTION

A letter from the daughter of Cornelius Rea Agnew, a report of whose life appeared on page 1211 in our issue of December 17, 1931, under the heading Boston Medical Library, states that the dates which appear below Dr. Agnew's name should have read "1830-1888".

REMOVAL

John Rock, M.D., announces the removal of his office from 198 Commonwealth Avenue, Boston, to 224 Commonwealth Avenue, Boston.

RADIO HEALTH MESSAGES

JANUARY-FEBRUARY-MARCH, 1932

Sponsored by the Public Education Committee of the Massachusetts Medical Society and the Massachusetts Department of Public Health.

Courtesy WBZA. Thursdays at 4:50 P. M.

February

25 Whooping Cough

March

3 The Psychology of the Crippled Child
10 Personal Rights vs. Public Safety
17 Electrical Hazards in the Home
24 Can High Blood Pressure Be Avoided?
31 Rose Cold and Hay Fever

STATE HOUSE BROADCAST

Sponsored by the Massachusetts Department of Public Health.

Courtesy WEEI. Fridays at 12:30 P. M.

Health matters of public interest discussed by the Division Directors of the Department.

RADIO HEALTH FORUM

Queries from the public are answered under the sponsorship of the Department of Public Health.

Courtesy WEEI. Fridays at 4:50 P. M.

Questions on Health and Prevention of Disease may be sent to: Radio Health Forum, State Department of Public Health, State House, Boston.

REPORTS AND NOTICES OF OF MEETINGS

BERKSHIRE DISTRICT MEDICAL SOCIETY

The February meeting of the Berkshire District Medical Society was held Wednesday, February 10, at the Irving House, Dalton. We were fortunate in having Dr. Howard M. Clute of the Lahey Clinic, as speaker, who discussed "The Management of Common Duct Obstruction." Dr. Clute stated that obstructive jaundice is due as a rule to common duct stones, to malignancy of the pancreas or of the large bile ducts or to stricture of the large bile ducts. The preparation of these patients for operation and the postoperative care is fully as important as the technical procedures needed to relieve the obstructive jaundice. Bad results in these patients are related to the damaged liver function, failure of kidney activity and to the tendency, which many of them have, to postoperative hemorrhage. Various tests necessary to enable one to predict these complications were given. Preoperative and postoperative management were discussed. Technical details involved in the relief of obstruction due to common duct stones, to malignancy of the duct and to common duct strictures were discussed and demonstrated with lantern slides.

HUGH DOWNEY, *Secretary.*

THE SEMI-ANNUAL MEETING OF THE MASSACHUSETTS TUBERCULOSIS LEAGUE

One hundred persons from all parts of Massachusetts gathered at Hotel Commander in Cambridge on Thursday, February 4, for the Semi-Annual Meeting of the Massachusetts Tuberculosis League.

A morning session was held at which the Secretaries of the twenty-eight Affiliated Organizations of the League discussed their experiences in the recent Christmas Seal Sale. Plans were also discussed for the 1932 sale. Copies of the 1932 Seal were distributed.

At the luncheon meeting Dr. Frederick T. Lord, President, presided.

Dr. Hilbert F. Day, President of the Cambridge Tuberculosis and Health Association, was the first speaker. Dr. Day described the joint study which is now being made by the Association, the Cambridge Health Department and the League, of children who have been cared for at the Sunshine Camp of the Cambridge Association. Dr. Day also announced that a study is being made of 600 families which came under the supervision of the Cambridge Association Clinic between 1903 and 1916. Dr. Helen Evarts of Cambridge is making this study to ascertain what has happened to the children of these families with respect to tuberculosis.

Dr. Robert B. Kerr, Executive Secretary of the New Hampshire Tuberculosis Association, described the progress of the tuberculosis campaign since the discovery of the tubercle bacillus by Koch in 1882.

Dr. George H. Bigelow, State Commissioner of Public Health, speaking in place of Dr. Alfred Henry, President of the National Tuberculosis Association, who was unable to be present on account of illness, said in part: "We are very much impressed that we have come a long way in tuberculosis but there is the menace that we may sit back and say that tuberculosis is now an old story and all there is left to do is sell a few more seals and tuberculosis will be wiped out. There has been a great revival of interest in tuberculosis in the last few years which is astonishing and the question now is to know how to utilize this revival and make the most of it.

"We are being criticized that the cost of a bed in a sanatorium is higher now than ever before. People do not seem to realize that this is because the treatment is entirely different and that maintaining a bed in a tuberculosis hospital demands all the resources of a modern general hospital. There is a bill before the legislature which would require cities and towns receiving a subsidy for tuberculosis patients hospitalized to comply with the standards set by the State. The State is not merely interested in saving money but

in saving tuberculosis. Up to now under the law we had to charge at least cost for each patient at Rutland. The Board of Health can get a patient into any county hospital for $10.50. As the charge at Rutland is $17.50 we are trying to put through a bill which would standardize the rate so that the waiting lists at other hospitals can be decreased, and also to make the cost to the Board of Health paying for the patient the same as if they went to a county institution.

"Only 20% of the beds in our institutions are used by patients who have tuberculosis in its early stages. Eighty per cent. of the patients in the hospitals are in the advanced and incurable stage. We spend $5,000,000 a year to maintain these beds. Why should they not be used by early cases instead of cases whose chances are very slight? It makes the cost greater and more spread of disease possible when these early cases should be taken care of. There should be 5-10 new cases for each annual death and last year we had only two cases. Case-finding is difficult of course and the resources for early finding must be ample—if not, the disease will continue to increase. Then too, we must have proper supervision, follow-up and vocational guidance for the arrested cases.

"Then there is the question whether the tuberculosis associations should interest themselves in diphtheria, heart disease, etc. This is all right if the tuberculosis resources are adequate. But we must stick to our knitting if we want to end tuberculosis. The League and its constituent branches must be prepared to jump in where they are needed and do all they can and then see that the work is taken over officially at the earliest possible moment."

On behalf of her associates, Frank Kiernan, Executive Secretary of the Massachusetts Tuberculosis League, presented a bouquet to Mrs. Mabel Greeley Smith, Executive Secretary of the Cambridge Tuberculosis and Health Association, who in point of service is the oldest tuberculosis worker in the United States. Mrs. Smith began her work in this field with the Cambridge Welfare Association in 1902 and became Secretary of the Cambridge Tuberculosis Aid and Education Association upon its establishment in 1904.

Following the program a meeting of the Board of Directors of the League was held at which the budget for 1932 was adopted and action was taken on pending legislation as follows:

Approval of the following Bills:

House Bill No. 1090 — which would permit the State Department of Public Health to reduce the rate for patients at Rutland State Sanatorium from $17.50 to $10.50.

House Bill No. 284 — (Dr. Woodward's Bill) which would require vaccination of children previous to admission to private schools.

House Bill No. 262 — which would require that no person shall be appointed as a Health Officer or Executive Officer of a Board of Health in communities of 10,000 and over except those trained in public health whose training and competence is approved by the State Department of Public Health.

House Bill No. 136 — which would require cities and towns receiving subsidy for tuberculous patients hospitalized to comply with minimum standards to be prescribed by the State Department of Public Health for the local use of subsidy funds.

The Directors voted to go on record as opposed to House Bill No. 226 introduced on petition of friends of chiropractic which would legalize the practice of chiropractic.

The Directors voted approval of the 1932 Seal Sale Contract between the National Tuberculosis Association and between the State League and its twenty-eight Affiliated Organizations.

A Health Education Meeting was also held at which Dr. Bigelow, Dr. M. Luise Diez, Dr. Francis P. Denny and others spoke. The meeting was presided over by Miss Jean V. Latimer, Educational Secretary of the League.

CATHOLIC HOSPITAL ASSOCIATION

The executive board of the Catholic Hospital Association of the United States and Canada announces the seventeenth annual convention of the association to be held at Villanova College, Villanova, Pennsylvania (near Philadelphia), June 21 to 24, 1932.

HARVARD MEDICAL SOCIETY

Owing to the illness of Dr. Theodore C. Greene, the program for the meeting to be held Tuesday evening, February 23, at 8:15 o'clock at the Peter Bent Brigham Hospital Amphitheatre (Van Dyke Street entrance) has been altered as follows:

PROGRAM

Presentation of Cases.

Von Goethe's Contribution to Comparative Anatomy, by Dr. Harvey Cushing.

Iron Men, by Dr. Reginald Fitz.

Medical students and physicians are cordially invited to attend.

JOHN HOMANS, *Secretary.*

NEW ENGLAND PEDIATRIC SOCIETY

The New England Pediatric Society will meet Friday, February 26, 1932.

PROGRAM

1. Clinical meeting at the Children's Hospital, Boston, at 4 P. M.

2. Evening program at the Boston Medical Library at 8:15 P. M.

A. Inaugural address—The Eczema Problem. Dr. Lewis Webb Hill, Boston.

B. The Promise of Psychiatry. Dr. James S.

Plant, Director of Essex County Juvenile Clinic, Newark, New Jersey.

C. Refreshments.

The meeting will start promptly at 8:15 P. M.

GERALD HOEFFEL, *Secretary.*

BELMONT MEDICAL SOCIETY

The next meeting of the Belmont Medical Society will be held on Friday, February 26, at 8:30 P. M., at All Saints' Parish House, Clark Street, Belmont. The speaker will be Dr. Henry T. Hutchins, Chief of the Surgical Staff, Massachusetts Women's Hospital. Subject: Certain Problems in Diseases of Women.

ERNEST W. SMALL, M.D., *President.*
FRANK J. FLEMING, M.D., *Secretary.*

SOCIETY MEETINGS
CONGRESSES AND CONFERENCES

February 19—New England Roentgen Ray Society. See page 310, issue of February 11.
February 23—Harvard Medical Society. See page 369.
February 25—Medical Clinic at the Peter Bent Brigham Hospital. See page 367.
February 25—Boston Health League, Inc. See page 259, issue of February 4.
February 26—New England Pediatric Society. See page 369.
February 26—Belmont Medical Society. See notice above.
March 2 - June 1—New England Heart Association. See page 891, issue of October 29.
March 11 - May 6—The William Harvey Society. See page 745, issue of October 8.
March 26—Examination Conducted by the American Board of Obstetrics and Gynecology (written)—May 10 (general, oral and clinical). See page 252, issue of February 4.
March - April, Autumn — International Postgraduate Courses in Berlin. See page 1169, issue of December 10.
April 4-8—The American College of Physicians. See notice on page 1232, issue of June 4.
May 9-13—American Medical Association, New Orleans, La.
June 8, 9, 10—Massachusetts Medical Society, Hotel Statler, Boston.
June 21-24—Catholic Hospital Association. See page 369.
October 24-27—American Public Health Association. See notice on page 1321, issue of December 31.
October 24-28—Inter-state Postgraduate Medical Association of North America. See page 39, issue of January 7.

DISTRICT MEDICAL SOCIETIES

Essex North District Medical Society

May 4—Annual meeting at Lawrence.

Essex South District Medical Society

March 2, Wednesday—Lynn Hospital. Clinic 5 P. M. Dinner 7 P. M. Subject to be announced later. Speaker: Dr. Elmer W. Barron, Boston.
April 6, Wednesday—Essex Sanatorium, Middleton. Clinic 5 P. M. Dinner 7 P. M. Speaker: Dr. Arthur P. Wakefield, State Department of Health. Subject: 10-Year Tuberculosis Program in the Public Schools.
May 5, Thursday—Censors' Meeting, Salem Hospital, 3:30 P. M.
May 10, Tuesday—Annual Meeting. The Tavern, Gloucester. Speaker and subject to be announced later. Ladies invited.

Franklin District Medical Society

. Meeting will be held on the second Tuesday of March and May at the Weldon, Greenfield, at 11 A. M.

CHARLES MOLINE, Secretary.

Middlesex East District Medical Society

At a meeting of the executive committee the following schedule for the Middlesex East District Medical Society was arranged:
March—At Reading.
May—At Woburn.
Meetings on the second Wednesday of each month unless otherwise announced.

Norfolk District Medical Society

February 23—Clinico-Pathological meeting, Dr. Frank S. Cruickshank, and Dr. J. W. Budd of the Medical and Pathological Staff of the Boston City Hospital.
March 29—Place to be announced. Boston Public Health Meeting. Speakers, Honorable James M. Curley, Dr. Francis X. Mahoney, Dr. Charles Wilinsky, Dr. W. H. Griffin.
May—Annual Meeting, date and place to be announced.
May 5—Censors' Meeting for examination of candidates. Roxbury Masonic Temple, 171 Warren Street, Roxbury, 4 P. M. Fee $10.00 payable at time of examination. All candidates will have applications in the hands of the secretary one week prior to this date. All candidates from Medical Schools not on approved list of Society must have application complete two weeks prior to date of examination.

F. S. CRUICKSHANK, Secretary.

Norfolk South District Medical Society

March 3—Speaker: Roderick Heffron, M.D. Subject: Pneumonia.
April 7—To be announced later.
May 5—Annual meeting.
The time of all meetings is 12 o'clock noon, at the Norfolk County Hospital, South Braintree. Censors will meet on May 5 at 11:15 A. M. at the Norfolk County Hospital.

N. R. PILLSBURY, Secretary.

Suffolk District Medical Society

February 24—Clinical Program, the Children's Hospital.
March 30—Clinical Program, New England Deaconess Hospital.
April 27—The Annual Meeting, Boston Medical Library. Election of Officers.
The Medical Profession is cordially invited to attend all of these meetings.

REGINALD FITZ, M.D., Vice President.
LELAND S. McKITTRICK, M.D., Secretary.
HILBERT F. DAY, M.D., Boston Medical Library.

Worcester District Medical Society

Wednesday evening, March 9 — Memorial Hospital, Worcester, Mass. 6:30—Dinner, complimentary by Memorial Hospital. 7:45—A pediatric meeting with subjects to be announced later.
Wednesday evening, April 13—Grafton State Hospital, North Grafton, Mass. 6:30—Dinner, complimentary by Grafton State Hospital. 7:45—Program to be announced later.
Wednesday afternoon and evening, May 11—Annual Meeting. Program to be announced later.

ERWIN C. MILLER, Secretary.

BOOK REVIEW

Dynamic Retinoscopy. By MARGARET DOBSON, M.D. London, Humphrey Milford, Oxford University Press. Price $2.50.

The author believes that dynamic retinoscopy is the chief means to attain a comfortable balance between accommodation and convergence, and that a combination of static and dynamic retinoscopy is necessary for accurate refraction. The method consists of a correction of the refractive error by the static method, a thorough study of prism ductions and phorias by the Maddox rod, and finally dynamic retinoscopy upon both eyes which are converging and accommodating at a given point.

The thesis will be of especial interest to those who are proficient in the use of the retinoscope with small pupils, and who are willing to apply an involved procedure. To give dynamic retinoscopy practical value requires scrupulous attention to the variable factors involved, and considerable intelligent experience. It would be enlightening if there were cited the results of two series of studies, first those obtained by the method of static retinoscopy alone, and secondly those obtained by combined static and dynamic retinoscopy, both gauged by the ultimate comfort obtained by the patient.